TEXTILE WORLD

A McGraw-Hill Publication ..... NOVEMBER • 1947

Industry EXPANDS, MODERNIZES, RENOVATES

Page 101

ANNUAL MILL CHECK-UP NUMBER

"You're Right!

Your Business Is Different!"

Each business has its own peculiar problems.

That is why Commercial factoring is so flexible —a modern method of financing—suited to your particular needs. Immediate working capital is made available through your accounts receivable. Cash is forwarded to you as shipments are made. Yet you sell on your regular terms. Credit losses and collection expense are assumed by us.

Let us tell you how Commercial factoring increases turnover and profits.

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Fred'k Victor & Achelis, Inc.
Established 1828

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Established 1838

Peierls, Buhler & Co., Inc.
Established 1893

TWO PARK AVENUE, NEW YORK

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T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

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DRAPER SERVICE

That knotty problem you have sweated and toiled and steamed over . . . that hard-to-find trouble which is making your production records take a nose dive . . . that defect which is piling up "seconds" and brings the Management down on your ears . . . that's the time you need help.

Perhaps one of our Service Men can bring you a new viewpoint; be of practical "down to shirt sleeves" kind of help. He is a specialist on Draper Looms. He has had wide experience in trouble shooting. His efforts and yours will be aided where necessary by our Engineering and Research Departments.

Why not avail yourself of this help . . . it's yours for the asking.

D

DRAPER CORPORATION

HOPEDALE MASSACHUSETTS U. S. A.

the Safe Bleach-

SODIUM CHLORITE

WON'T DEGRADE PULPS, FATS OR FIBERS

When most standard bleaching agents have oxidized up to a certain point—comes the attack! Fibers are tendered; pulps lose strength; fats revert . . . further bleaching must stop, or be subject to close, costly control.

It's a different story with Mathieson's Sodium Chlorite—and its co-product Chlorine Dioxide—the new bleaching agents which do not degrade pulps, fats or fibers, and hence permit safe bleaching to new highs in whiteness.

Mathieson
SODIUM CHLORITE

Sodium Chlorite Products . . . Chlorine Dioxide
Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda
Liquid Chlorine . . . Ammonia, Anhydrous & Aqua
HTH Products . . . Fused Alkali Products . . . Dry
Ice . . . Carbonic Gas . . . Sodium Methylate

WHITE COTTON WITH STRENGTH

Cotton fibers, when bleached with Mathieson's Sodium Chlorite (Textone) and hypochlorite, are not attacked. Thus better whites are possible with no loss of tensile strength . . . solutions need only slight control.

HIGH BRIGHTNESS IN PULP

Paper pulps reach very high brightness levels when bleached with chlorine and chlorine dioxide mixtures. Degrading effects are negligible, and pulp yields are high. The mixed-in chlorine cuts costs.

UPGRADING FATS NOW EASY

Lower grade fats are easily improved to a quality suitable for high-grade soaps, by bleaching with Mathieson's Chlorine Dioxide. No deterioration . . . improved color and odor . . . much higher yields.

Sodium Chlorite—a Mathieson development—is a stable chemical which is used directly for many bleaching and oxidizing purposes . . . or used in conjunction with hypochlorite . . . or as a convenient source of the powerful oxidizing agent, Chlorine Dioxide. Details on the many applications are yours for the asking. Write to: Sales Development Department, The Mathieson Alkali Works (Inc.), 60 East 42nd Street, New York 17, New York.

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THE *Long-Range* VIEW

INTERCHANGE OF INFORMATION

At the fall meeting of the Textile Operating Executives of Georgia four members of the TEXTILE WORLD staff were in attendance, because it promised to be, and was, a significant meeting in regard to interchange of information—and TEXTILE WORLD editors pride themselves on keeping informed about textile developments.

It is unusual that a meeting of mill men results in such an informative discussion of technology as occurred during that meeting, during the preparation for the meeting, and after the meeting.

Many, many organizations have been set up for the exchange of information, but too many degenerate into a good-time meeting group—on expense-account funds.

Admittedly, fellowship at any gathering is of appreciable value. There are benefits in learning to know your contemporaries personally. But have you noticed that at a strictly "fellowship" gathering there is an absence of the more serious textile men? Perhaps the elements lacking in such gatherings are (1) tangible benefits and (2) personal recognition for work well done.

Unquestionably, men who take part in good technical sessions, such as the T.O.E.G. meeting referred to, achieve recognition for their contributions. Consciously or not, such recognition is something that every normal person craves, as any good psychologist will tell you. But recognition is only a small part of the benefits accruing to a person taking part in a good technical meeting. His preparation for the meeting and the actual expression of his ideas crystallize thoughts that might otherwise disappear, be hazy, or become distorted. The same is true, of course, when an author writes a technical paper for publication.

Interchange of information is good for our industry. There was not a person at the Georgia meeting who did not take away more than he contributed. That statement is the answer to the few top executives who decline to let their technical or operating men participate in an exchange of information. There really are such executives. Even during the war, when virtually all mills worked together exchanging ideas as well as materials, there were some few who refused to cooperate with their fellows.

We learned during the war what could be accomplished by extensive cooperation in the exchange of information. Similar all-out effort may not be needed now; but the old saying still holds true that if you give a man an idea and he gives you one, you each then have two.

Another thing might be learned from the Georgia meeting (which, incidentally, is reported starting on page 145): There are some things about which none of us seem to know anything—you may even have problems in your mill which you do not know exist. A good example is what was brought out in regard to cotton size. Evidently, every mill using starch size is losing over 10% of its material; did you know it? Perhaps the reason you didn't was because you just never have had time to look into this subject even though it may be directly in your line of work. It could be that you, like most persons, depend more upon what you learn from others than on what you are able to find out by yourself.

You have to depend upon others, and to some extent others depend upon you. Are you contributing to the interchange of information and the improvement of the textile industry?

C. H. Bendigo

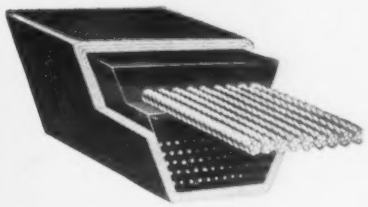
G-T-M-Specified

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

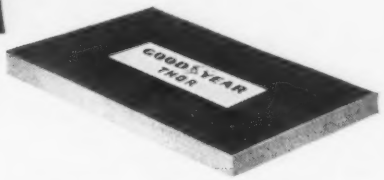
THE BIG 3 FOR BIG SAVINGS

YOU'LL SET NEW PERFORMANCE STANDARDS WITH THESE OLD RELIABLES

TEXAIR HOSE — most economical ever built for cleaning spindles and carding machines. Light, supple, unusually strong cover won't soften or weaken from contact with oil, but is tough and resists cutting and abrasion, insuring longer life.



E-C CORD MULTI-V BELTS are uniform in length, cross section, pull and service life. Their perfect teamwork insures lowest ultimate cost.



THOR BELTS are square-edged, top-quality, close-woven, silver duck belts designed for high-speed drives where there is severe flexing over small pulleys — and for heavy drives requiring shock load resistance and the ability to hold fasteners.

HERE are three standout performers that have proved their worth in countless installations. They exemplify the economy, the long life, the tried-and-true dependability you get from all Goodyear Industrial Rubber Products.

Whatever your rubber problem, you'll find the answer in a Goodyear product, specified in the size and construction best suited to your needs by the G.T.M.—Goodyear Technical Man. For on-the-spot advice by this friendly counselor, write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

FOR HOSE, BELTING, MOLDED GOODS, PACKING, TANK LINING, built to the world's highest standard of quality, phone your nearest Goodyear Industrial Rubber Products Distributor.

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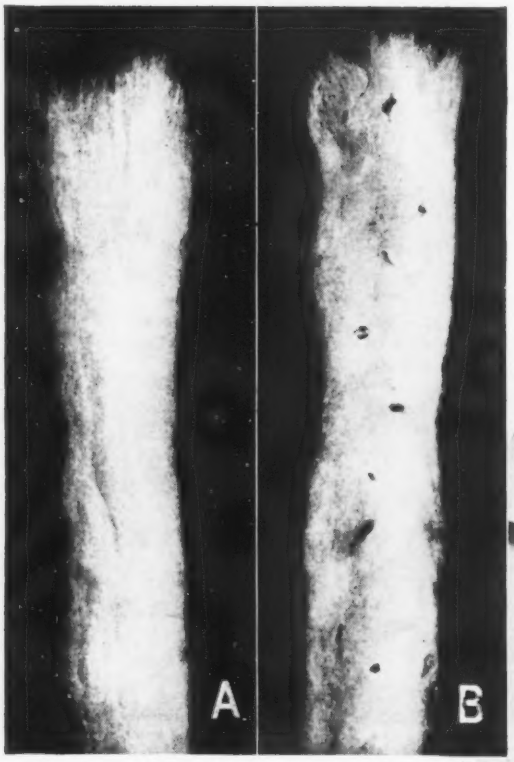
GOODYEAR

THE GREATEST NAME IN RUBBER

The Continuous Stripper - an economical "tool" for BETTER PRODUCTION and CLEANER CLOTH



A comparison of card slivers . . . A—a clean cylinder produces a sliver with a minimum of neps, broken leaf, and other impurities.

B—a dirty cylinder, loaded with impacted waste, cannot do an efficient cleaning job.

The Saco Lowell Continuous Stripper is daily demonstrating its ability to increase production at the card and at the same time reduce waste and improve the cleanliness and evenness of the sliver.

The freedom from impacted waste, which interferes with the carding action of the wire of the cylinder clothing, generally reduces the nep count; and the lack of periodical stripping improves the uniformity of the sliver.

The improvement in card operation shown by the 'test data' at the right, is by no means an unusual case as evidenced by the fact that —

there are more than 12,000 Saco-Lowell Continuous Strippers now in operation —

increasing production, improving quality and preventing waste for mills who have put them on their cards.

Write for bulletin to our nearest office.

Here are the improvements in one mill after installing Saco-Lowell Continuous Strippers:

Reduction in Cylinder and Doffer Strips
96%

Reduction in Neps in Sliver
38%

Reduction in Impurities in Sliver
24%

Increase in Breaking Strength of Yarn
5.4%

Saco-Lowell Shops • **BOSTON**

SHOPS AT BIDDEFORD, MAINE · BRANCHES: CHARLOTTE · GREENVILLE · ATLANTA

"Which Squirrel-Cage Motor Shall I Buy?"

Open-Type? This general-purpose squirrel-cage motor meets about 9 out of every 10 application requirements; so chances are it's the design you'll select. Allis-Chalmers builds generously proportioned, rugged *open-type* squirrel-cage motors in sizes from 1 hp to the largest practical requirement.

Splash-Proof? Where operating conditions are conducive to entrance of particles or liquids into ordinary motors from either top or sides, Allis-Chalmers *splash-proof* squirrel-cage motors may be your best buy. They're designed to *exclude* top or side directed particles and liquids. Sizes 1 hp to the largest.

Vertical? or Flange-Type? *Either* can solve a space problem. *Vertical* motors (sizes 1 hp to largest) for vertical drives. *Flange-mounted* for side or angle drives. In both types bearings and closures are designed to prevent grease escapement. Mounting flange for attaching to your base can be provided.

Totally-Enclosed? Explosion-Proof? Completely weather-proof and fan-cooled, these motors are built to beat abrasive dust, dirt and corrosive fumes, or moisture conditions that cause windings in ordinary motors to deteriorate. *Explosion-proof type* for oil refineries, paint, varnish or lacquer plants, etc.; Underwriters approved; reduce hazards in explosive or dust atmospheres. Either type built from 1 hp and up.

Are Motor Decisions More Important Today?

YOU BET THEY ARE! One *obvious* reason is the need for keeping costs down. Another is that in the rush to fill demand much equipment is being misapplied; making it harder to maintain profits not alone today, but tomorrow, the next day and the next year—as long as misapplication continues!

That's why it's important to take a good look at motors — their characteristics — your equipment — power source and surroundings — *before* you buy and apply! If you're in doubt, don't take chances — call a motor expert! ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2327

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A CENTURY OF SERVICE to Industry THAT MADE America Great

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Biggest of All in Range of Industrial Products

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-6, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

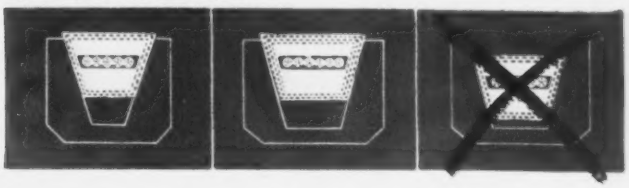
Hycar
Reg. U.S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY

Now You Can Get Worthington QD Sheaves at Substantial Price Reductions

Worthington's increased production of QD Sheaves — to meet industry's growing demands—has resulted in lower production costs, which we pass along to you — our customer, as a substantial price reduction in stock "A" and "B" sheave sizes. Service has been improved, too! From conveniently located stocks you can choose over 25,000 QD Sheave combinations for V-Belt drives ranging from fractional to 200 hp.

Strength Where It's Needed Most. Upper sketch shows I-Beam construction in Worthington QD Driven Sheaves. Compare it with conventional design below and note how material is concentrated where strain is greatest — putting strength where strength is needed most. Taper-mated, load-tested hubs and rims, full-sized pull-up bolts and I-Beam arm construction are Worthington features which make the QD Sheave the "Strongest Sheave for its weight ever made" — a plus value to sheave users.

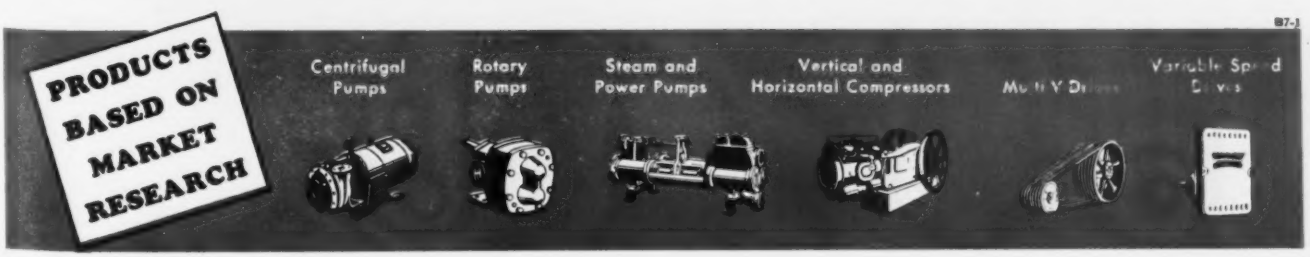


Customer Preference Based on Market Research. Customer preference dictated a basic change in the original QD Sheave from a combination groove to a separate "A" and a separate "B" groove — which is what you, our customer, wanted — to give you a better appearing sheave and a better fit between belt and groove. Worthington QD Sheaves are custom-built to fit the belt — an "A" belt in an "A" groove — a "B" belt in a "B" groove. Available in listed stock sizes from 3" to 22" diameters in "A" section; from 4" to 38" in "B" section.

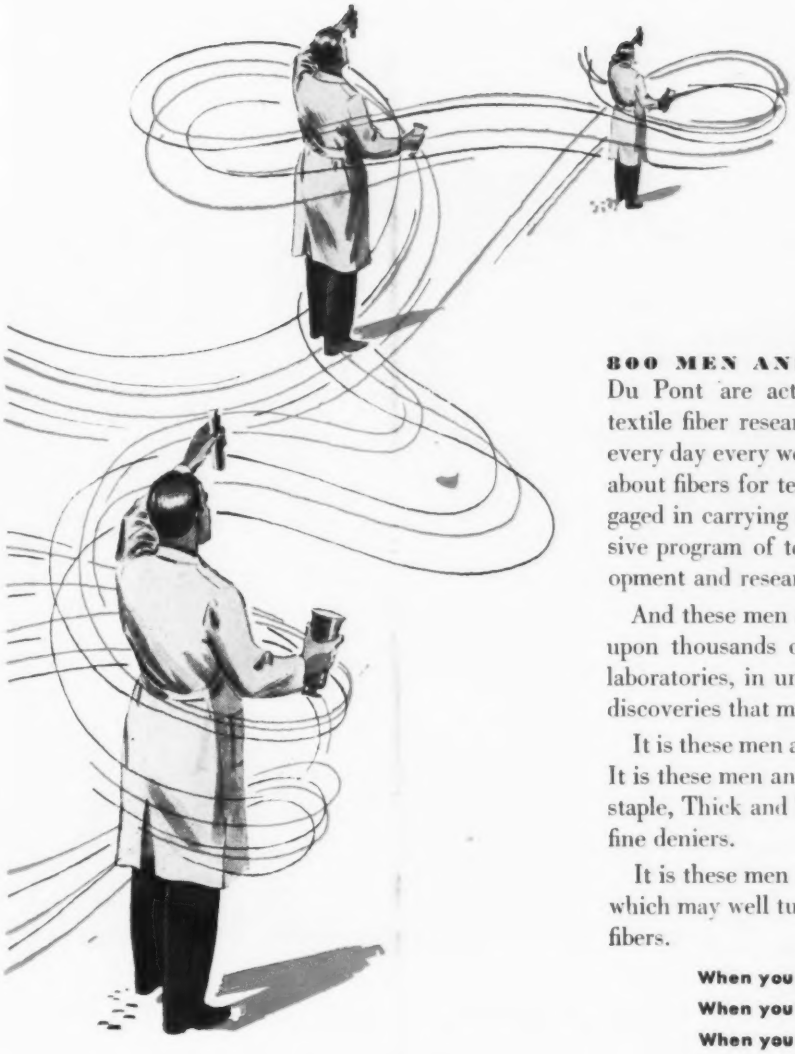
Get the Proof. A demonstration in your own shop will convince you that only Worthington — the original QD Sheave — is Easy to Get On — Easy to Get Off — Yet Always Tight on the Shaft — proof that *there's more worth in Worthington.*

Contact your nearest distributor for a demonstration today. Worthington Pump and Machinery Corporation, Merchandising Div., Harrison, N. J. 36 District Offices throughout U. S.

WORTHINGTON



800 research brains at work



800 MEN AND WOMEN of Du Pont are actively engaged in textile fiber research. All are busy every day every week learning more about fibers for textiles. All are engaged in carrying out a comprehensive program of textile fiber development and research.

And these men are not alone. Back of them are the thousands upon thousands of Du Pont scientists at work every day—in laboratories, in universities, in factories—who are making basic discoveries that may influence tomorrow's textiles.

It is these men and women who developed and perfected nylon. It is these men and women who have been responsible for rayon staple, Thick and Thin Rayon, high tenacity yarns, and the first fine deniers.

It is these men and women who are working today on projects which may well turn out to be tomorrow's biggest news in textile fibers.

When you need acetate rayon . . .
When you need viscose rayon . . .
When you need nylon . . .
When you need help in where and how to use any of these man-made fibers . . .

take it up with Du Pont

IT'S A NAME TO DEPEND ON . . . DU PONT!

ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION

Rayon Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Del.

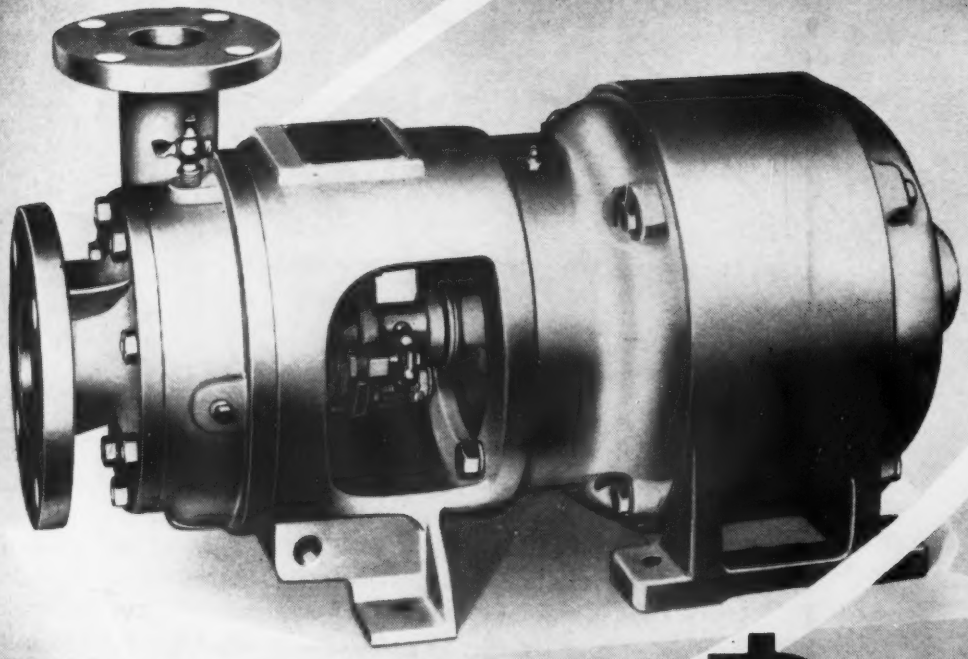
For NYLON
For RAYON
For FIBERS to come...look to Du Pont

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

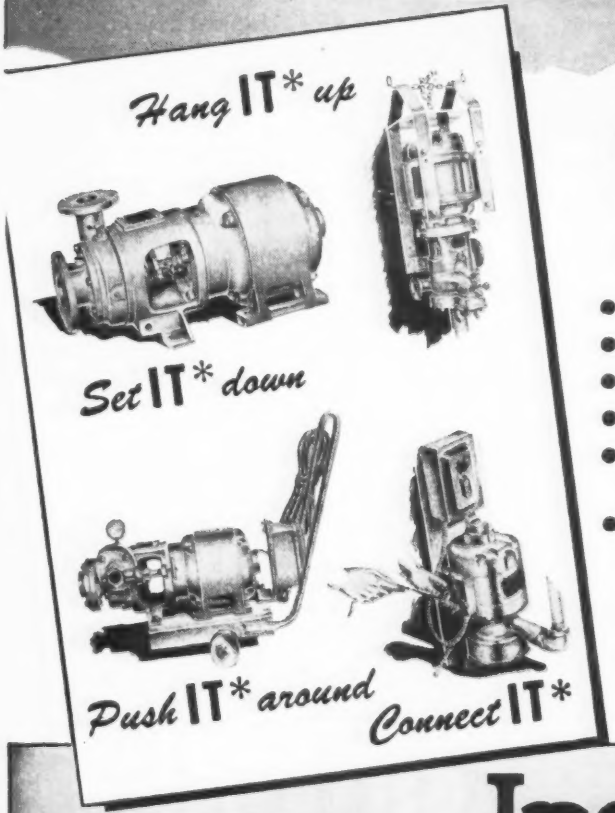
DU PONT

REG. U. S. PAT. OFF.

THE *Versatile* PUMP...



I-R MOTORPUMP*



HERE IS WHY THE MOTORPUMP HAS THE STAMINA FOR CONTINUOUS SERVICE ON COUNTLESS, VARIED JOBS:

- Motor and pump on one rigid, extra-heavy shaft.
- Oversize bearings insure long life.
- Simplicity—only one moving part—the rotor.
- Works in any position.
- 75 years of pump-building experience are built into the Motorpump.
- Heads to 600 ft. Capacities to 1800 gpm.

Send for the Motorpump Catalog. There's an I-R Engineer near you who will be glad to help you with your pumping problems.
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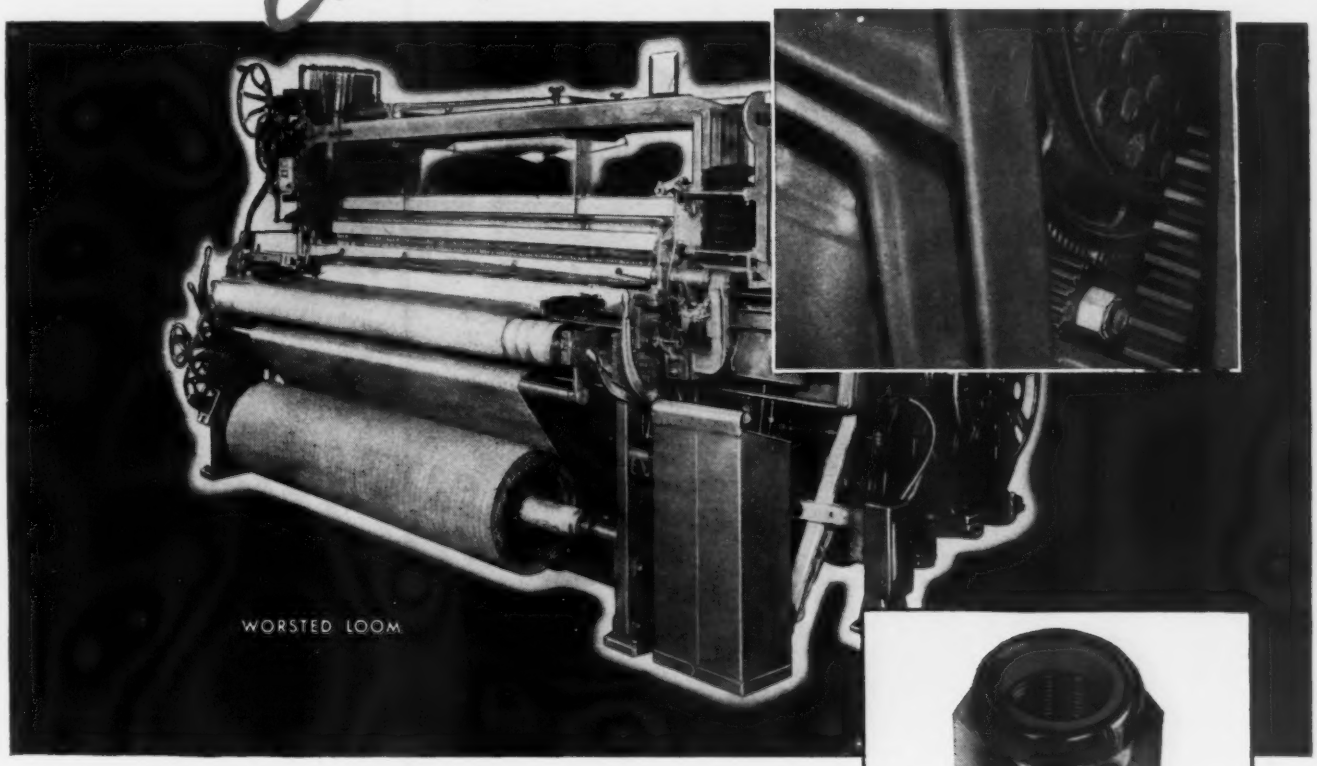
8-9

11 BROADWAY, NEW YORK 4, N. Y. **Ingersoll-Rand**

SELF-LOCKING *Prevents Costly Wear* **ON THE MOTOR PINION GEAR SHAFT**

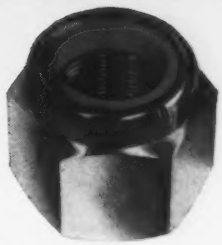


The Red Elastic Collar protects prestressed settings against IMPACT! VIBRATION!

Vibration—built up by the distinct shock, or pounding, of the gears at pick and beat up—can cause costly wear if the pinion gear fastener fails. A loose pinion gear has a tendency to cause excessive tooth wear. This may result in changed gear alignments, replacement damage to the tapered armature shaft, and upset split-second, synchronized loom timing. Finally uneven power delivery produces a wavy cloth condition that degrades goods to #2 or #3 quality.

Here's a suggestion to loom fixers: Apply ESNA Elastic Stop Nuts to your pinion gears and other vibration trouble spots every time you have to remove an ordinary fastener for repairs or adjustment. Your maintenance orders can be filled immediately from stock.

Re-usable Elastic Stop Nuts—with the self-locking, self-sealing Red Elastic Collar—provide dependable protection against Vibration, Thread Corrosion, Thread Failure, and Liquid Seepage. ESNA engineers are now ready to study your fastener problems. Address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and leading Distributors are located in many principal cities.



LOOK FOR THE RED COLLAR

THE SYMBOL OF SECURITY

It is threadless and dependably elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between the bolt and nut.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ESNA TRADE MARK

ELASTIC STOP NUTS

INTERNAL WRENCHING

ANCHOR

WING

SPLINE

CLINCH

GANG CHANNEL

CAP

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

Fletcher WHIRLWIND EXTRACTORS

Fletcher WHIRLWIND — the most modern type of high-speed extractor — is the only extractor with automatic hydraulic brake and "finger tip" control for smooth, safe stops.

Its large capacity . . . unusual self-balancing . . . all-around performance . . . and ready accessibility all around the basket are features that increase production, assure fast, safe, thorough extraction.

Investigate the Fletcher WHIRLWIND . . . its sturdy, rugged construction and dependable, trouble-free operation will save you valuable time and money. Write for our catalog, today. Engineering consultation available without obligation.

FLETCHER WORKS

223 GLENWOOD AVE. **PHILADELPHIA 40,** ESTABLISHED • 1850

ONE important place to start reducing costs is with the machine where goods are made.

Speedier production is very definitely a function of New Departure ball bearings.

Operating with less friction, less wear than other types, the ball bearing is a "natural" for the higher speeds, greater rigidity and improved quality of product demanded by today's exacting production standards.

Thus, an investment in machines of modern ball bearing design is an investment in faster production—lower costs.

New Departure's technical literature is most helpful. Tell us your needs.

NEW DEPARTURE*
BALL BEARINGS

3496

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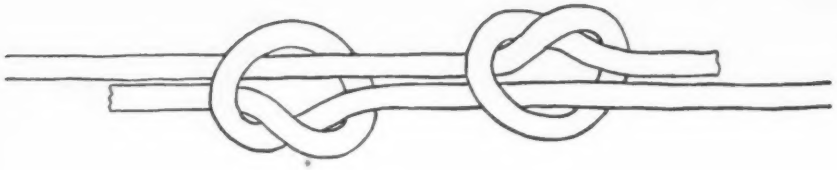
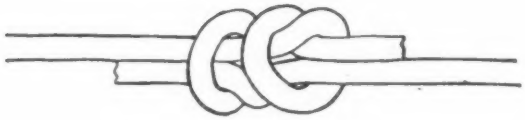
NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN. • Branches in DETROIT • CHICAGO • LOS ANGELES and other cities

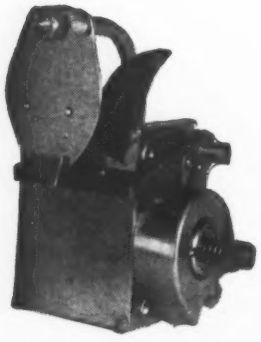
DO YOUR KNOTS SLIP?



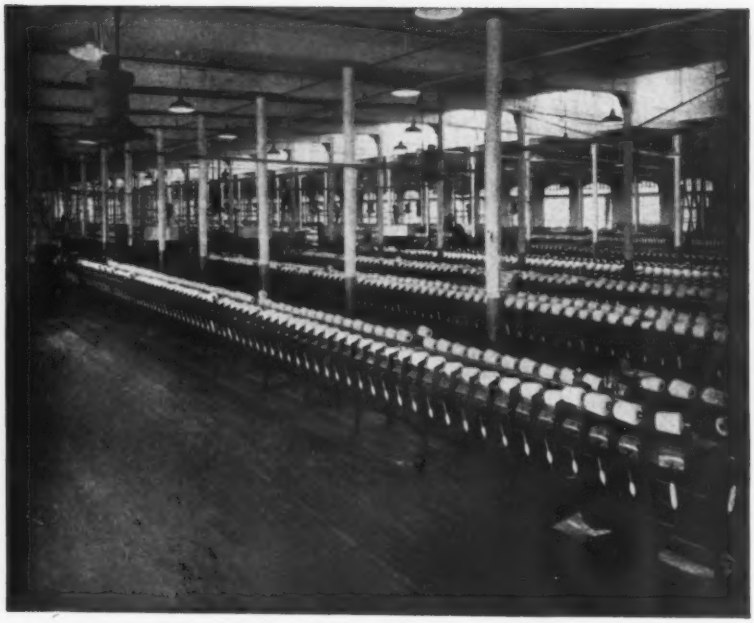
USE THE FISHERMAN'S KNOT



TWO SINGLE KNOTS PULLED UP AGAINST EACH OTHER



The knot tier is a small precision made unit that can be replaced by a spare knotter in two minutes



All of our Traveling Spindle Winders tie this small, smooth, non-slipping Fisherman's knot

ABBOTT MACHINE COMPANY

WILTON, N. H.

SANDOZ PRESENTS *the color achievement of the month*

Within his own four walls is one place a man can give full rein to a desire to express himself in color. From the famous "stable" of Stafford robes, bearing the distinctive stallion trademark, he can select his own winning colors.

Goodman & Theise, Inc., manufacturers of Staffordwear, have selected Sandoz to participate in the dyeing of Stafford fabrics.

Typical of the Sandoz products offering economies in handling and the greatest possible certainty of color fastness is CHLORAMINE BRILLIANT ORANGE RS which has excellent properties for printing of rayon fabrics. It is the brightest of all direct orange dyestuffs and is also ideal for clear salmon-pink and tea-rose shades on underwear fabrics and sewing thread where its good wash fastness is appreciated.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements.

Sandoz application laboratories are located in New York, Boston, Los Angeles, Philadelphia, Charlotte and Toronto, where stocks in a wide range are carried. Other branches are in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

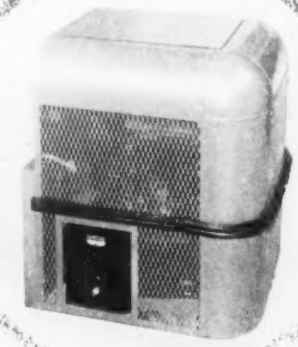
SANDOZ *thinks ahead with textiles*

SANDOZ

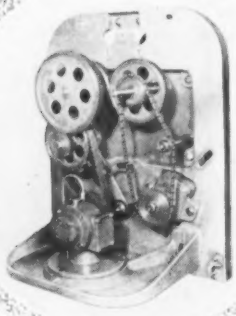
From motor pulley to twister package

HERE'S PERFECT POWERING

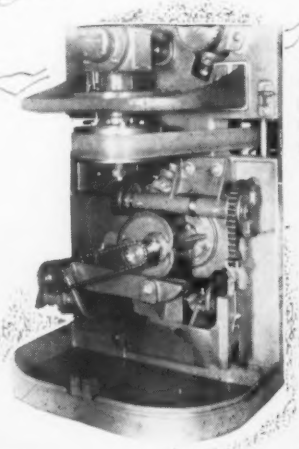
on the Atwood Ring Twister



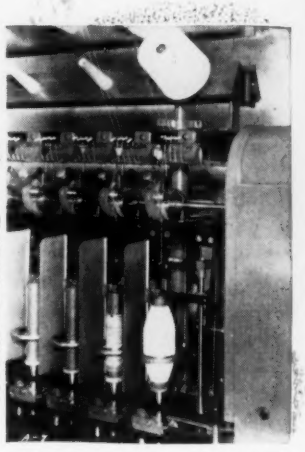
Grille-ventilated motor, with 3-point suspension and automatic belt takeup, powers single endless, lapless belt which drives 100 spindles at uniform spindle speed.



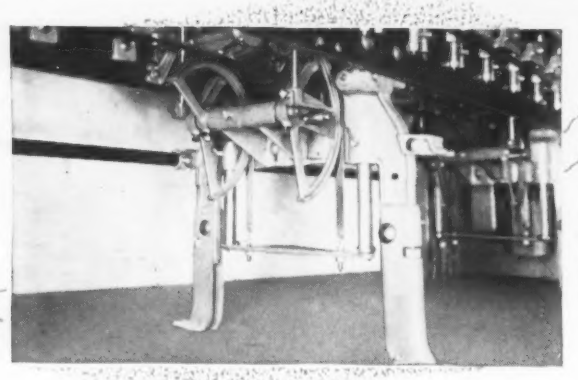
Matched spiral bevel gearing and chain drive give smooth operation of twist gearing. Only one gear to change when changing twist within the range of any twist constant. Geared end is totally enclosed.



Worm and worm gear of builder motion are enclosed in dust-tight housing and operate in oil bath. Eccentric adjustment eliminates backlash.



Spindle is integrally connected with automatic stop motion so knots can be tied in single ends, avoiding roller laps and short plies. Other spindles keep producing.



Lifter rod unit produces smooth ring rail motion. Segments, spring steel straps and lifter rods move in vertical line through bearings which are integral part of middle stand.

For doubling and twisting in one operation, consider the many advantages of the Atwood Model 10 Ring Twister. Send for bulletin.

ATWOOD DIVISION

STONINGTON, CONN.

Universal Winding Company

ATWOOD

Reg. U. S. Pat. Off.

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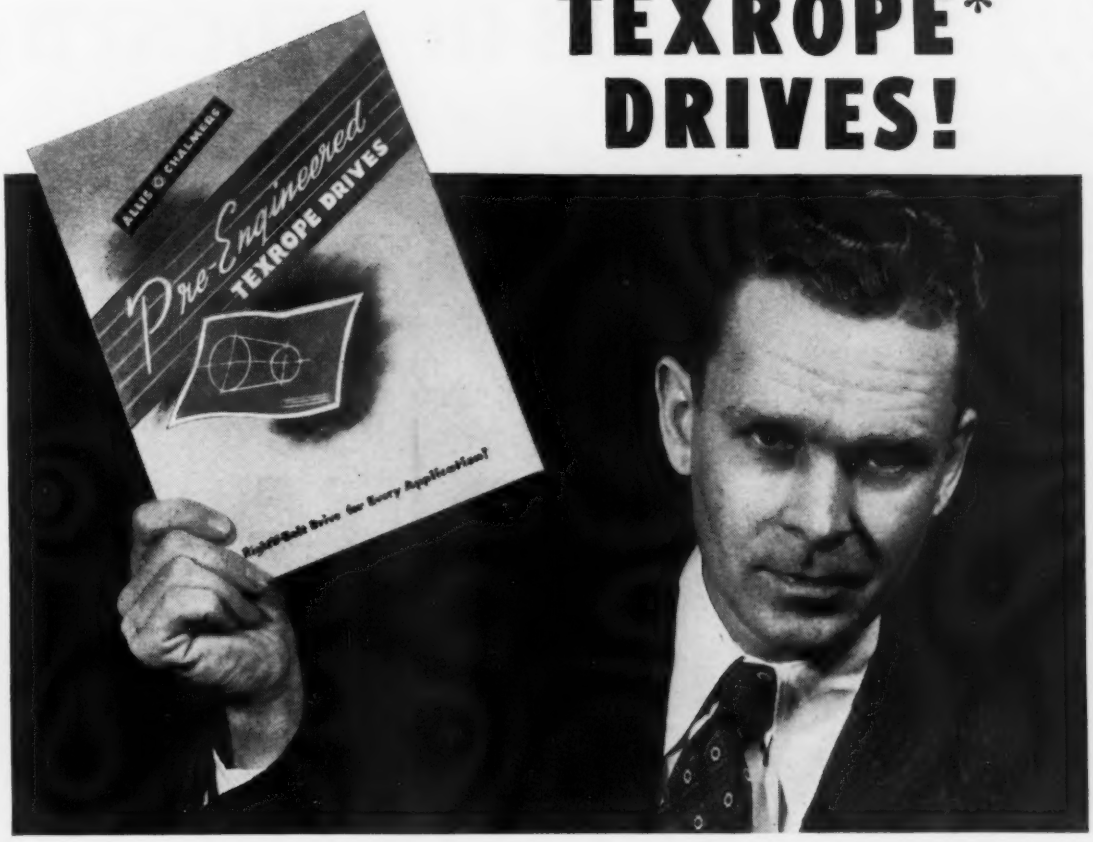
Manchester, England • Paris, France • Basle, Switzerland. Agents in every principal textile center in the world.

NEW MANUAL PRESENTS

Pre-Engineered TEXROPE* DRIVES!



Selects Most Economical Drive for Any Installation!

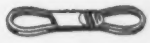
NEVER BEFORE has specification of the *right* V-belt drive been made so simple, so unerring. You turn to a page, run down a column, and there, in *one place* is the drive you need . . . number of grooves, diameters of sheaves, size of belt. No turning from table to table, no figuring.

These *Pre-Engineered* stock Texrope drives cover 90% of all requirements. Texrope engineers have carefully selected each one, using economical *stock* belts and sheaves. Each selection is the *one best drive* for a given requirement of power, speed and dimension.

For the few cases not covered by *Pre-Engineered* stock drives, the manual provides complete, carefully arranged engineering data to make it easy to figure special drives.

Now Available . . . 144 pages, indexed, size 8½ by 11 inches. The most complete V-belt drive manual ever published. A book that only Allis-Chalmers can give you. Copies have been sent to many Texrope dealers and users. If you have not received one, write for Texbook No. 20P40. ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2333

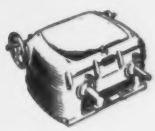
TEXROPE .. Greatest Name in V-Belt Drives



"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip" — sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.



SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.

ENGINEERING
Finest V-Belt engineering talent in the world—at your call.

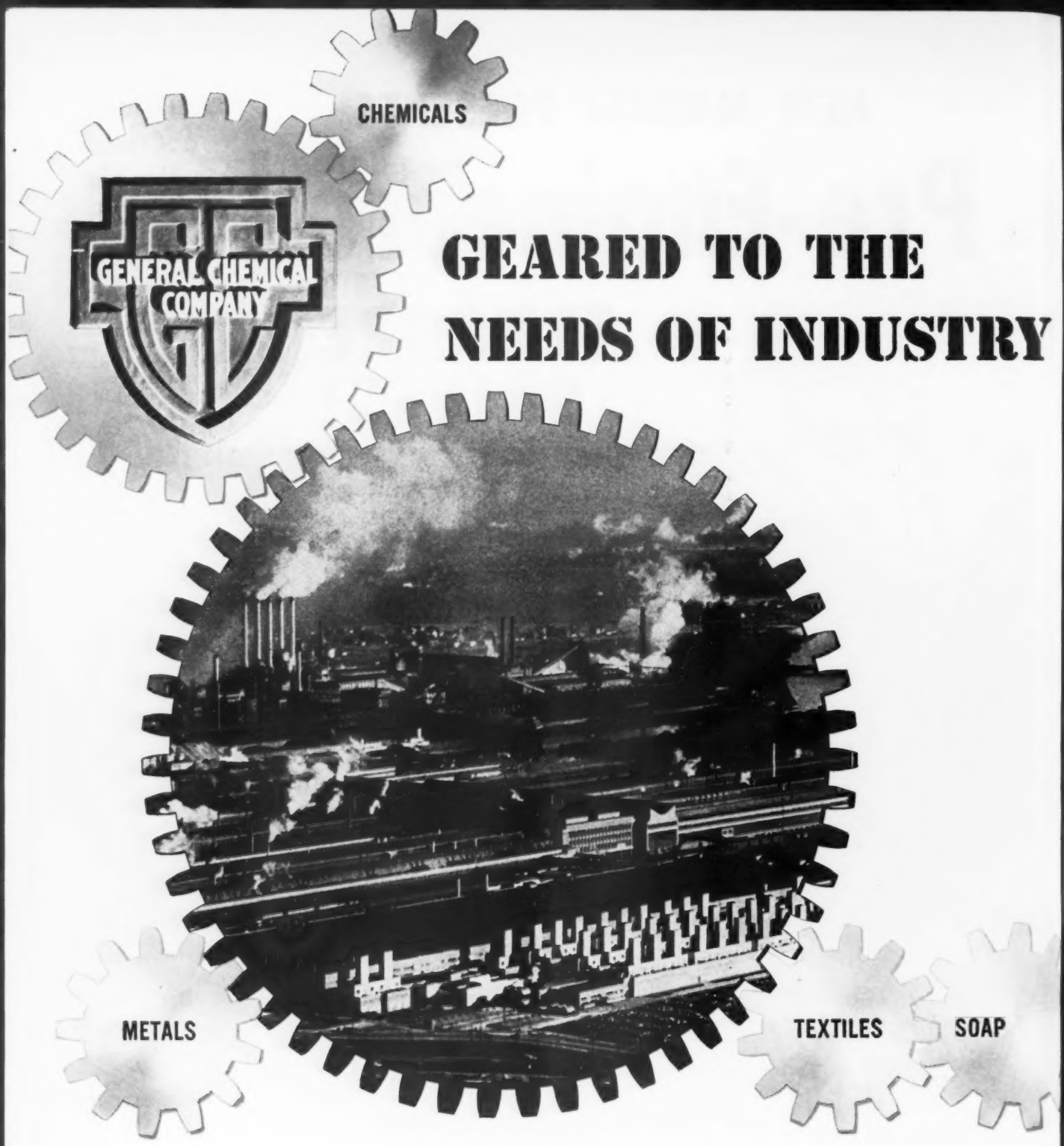
TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

*Texrope, Super-7, Texsteel, Texdrive, Magic-Grip and Vari-Pitch are Allis-Chalmers Trademarks

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

1847 1947
A CENTURY OF SERVICE to Industry THAT MADE America Great



GEARED TO THE NEEDS OF INDUSTRY

The General Chemical Company Sales and Technical Service organization works shoulder to shoulder with Industry . . . constantly alert to changing chemical demands in every field. Closely coordinated with it are the Company's progressive research program, and extensive—yet extremely adaptable—production facilities.

This way, General Chemical products are always geared to the needs of Industry . . . their grades and strengths meeting the most exacting requirements of the day. From such closely meshed efforts are coming General Chemical's new organic and inorganic chemicals for the process industries of tomorrow. The past stands proof that these, too, will be equally essential "Basic Chemicals for American Industry."

when it's basic chemicals

...call on GENERAL CHEMICAL first!

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Acetic Acid
Acetic Acid, C.P.
Fluosulfonic Acid
Hydrochloric Acid, C.P.
Hydrofluoric Acid, Anhydrous
Hydrofluoric Acid, Aqueous
Mixed Acid
Muriatic Acid (Hydrochloric)
Nitric Acid
Nitric Acid, C.P.
Oxalic Acid
Sulfuric Acid
Sulfuric Acid, Electrolyte
Sulfuric Acid, C.P.
Oleum (Fuming Sulfuric Acid)

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Aluminum Sulfate—Iron Free
Crystal Alum Ammonium
Crystal Alum Potassium

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Metal Fluorides
Double Fluorides
Non-Metal Fluorides
Acid Fluorides
Alkali Fluoborates
Metal Fluoborate Solutions
Fluorine Acids
Organic Fluorine Compounds

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Sodium Aluminum Sulfate
Sodium Bifluoride
Sodium Bisulfite, Anhydrous
Sodium Fluoride
Sodium Thiosulfate (Hypo)
Sodium Metasilicate
Disodium Phosphate, Anhydrous
Trisodium Phosphate (TSP)
Tetrasodium Pyrophosphate, Anhydrous
Sodium Silicate
Sodium Sulfite, Anhydrous
Glauber's Salt, Anhydrous
Glauber's Salt, Crystal
Nitre Cake (Sodium Bisulfate)
Salt Cake (Sodium Sulfate)

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Acetyl Chloride
Aluminum Chloride Solution
Aluminum Nitrate
Ammonium Sulfate, Purified
Ammonium Thiosulfate Solution
Aqua Ammonia
Ammonium Hydroxide, C.P.
Benzene Hexachloride
Bysulox @ (Railway Weed Killer)
Calcium Acetate, Purified
Chromium Nitrate Solution
Copper Nitrate
Cuprous Chloride
DDT (Dichloro-diphenyl-trichloroethane)
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Formic Acid (85, 90, 98%)
Iron Sulfide
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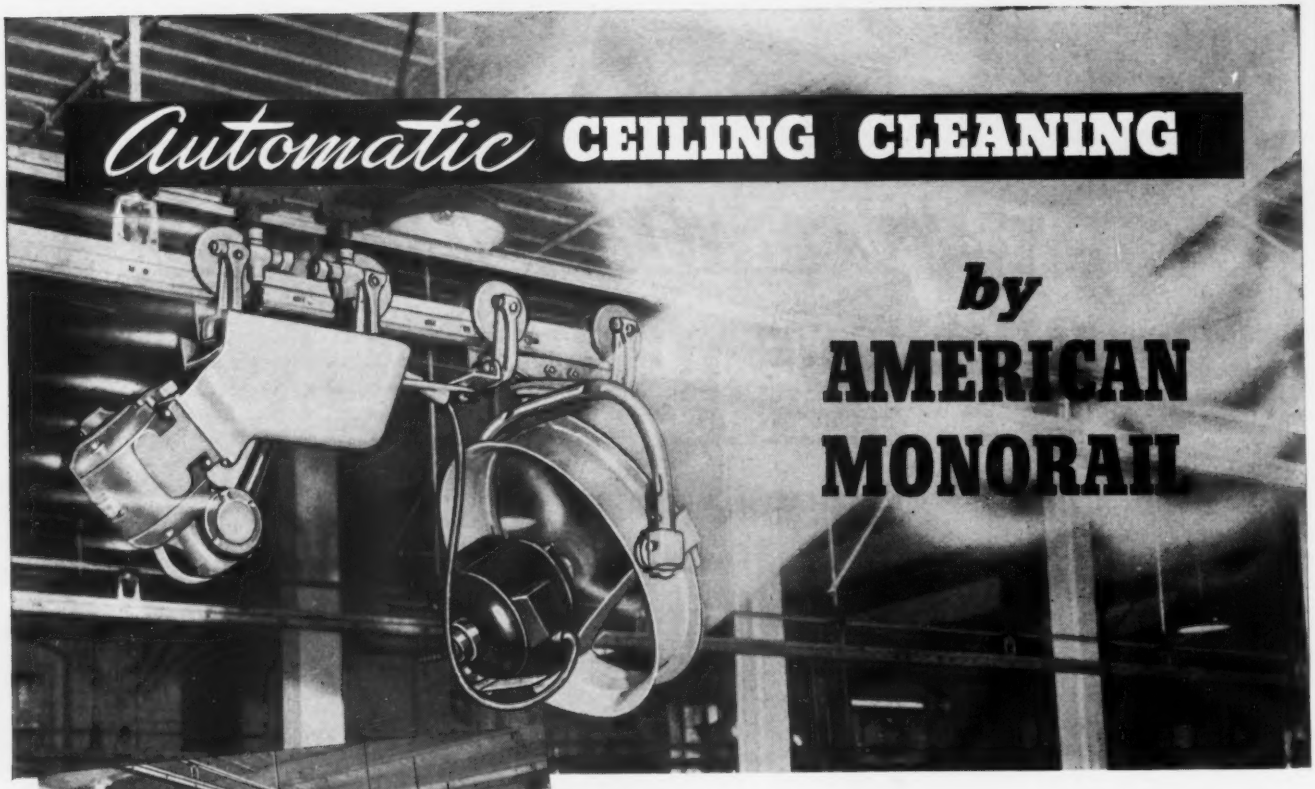
BASIC CHEMICALS

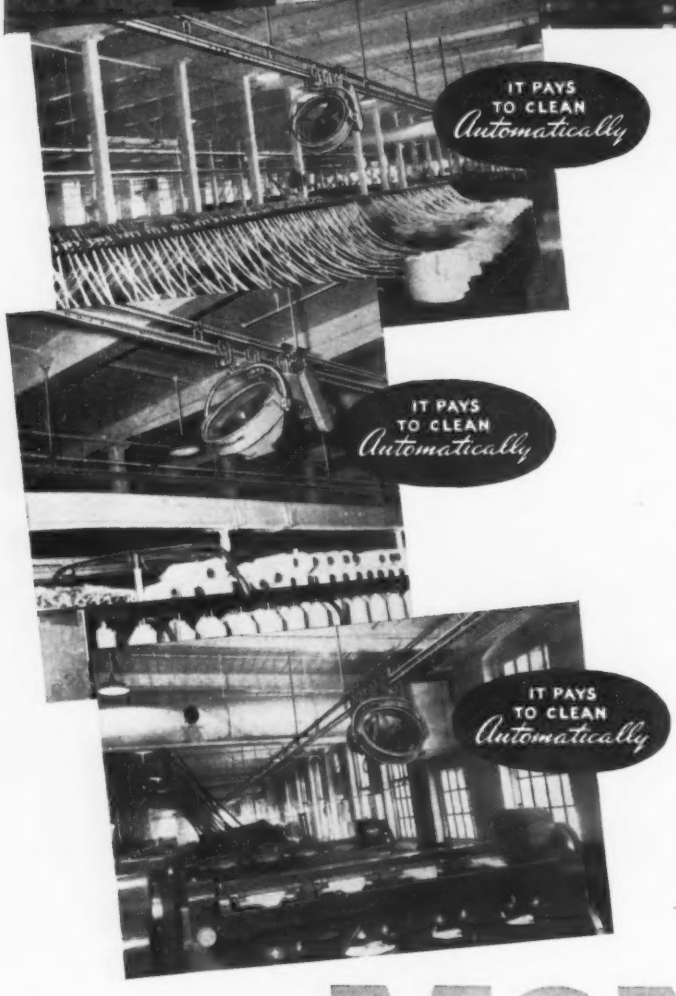
GENERAL CHEMICAL COMPANY

FOR AMERICAN INDUSTRY

Automatic CEILING CLEANING

by AMERICAN MONORAIL





Mops, brooms and air hoses are out as far as ceiling cleaning is concerned. High labor cost and lost production during time down make these tools obsolete. In one mill these costs amounted to approximately $1.50 per hour—the cost of installing automatic ceiling cleaning was absorbed by savings in less than a year.

Automatic cleaning is installed on overhead monorail track. A high-velocity propeller type fan unit travels around a loop of monorail track and sends a blast of air against the ceiling preventing any accumulation of lint or fly.

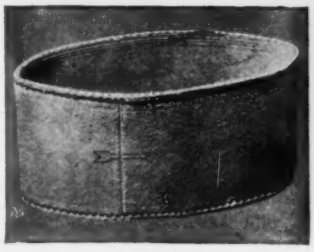
Fans may be adjusted to reach any spot in the room. Automatic ceiling cleaners are no longer an experiment. They are being installed in many mills. Let an American MonoRail engineer give you complete details.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO

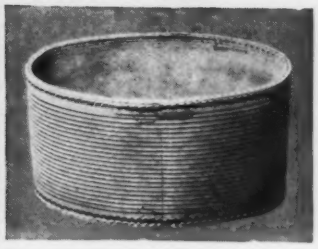
BARNES PRODUCTS

"Each the Best for its Job"



Finisham (Plain)
Soft Special tan, white

Gam-Oil (Plain or Grooved)
Semi-firm



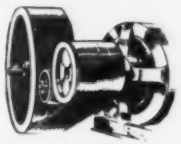
Oak Tan (Grooved)
Firm

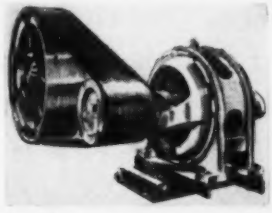
For Finest Finishing
BARNES RUB APRONS

87% of French Drawing mills in U. S. and Canada use this apron. Also in demand for mills in South America and England. Three choices from the Barnes line: Finisham, Gam-Oil and Oak Tan. Minimum stretch, no running off rolls, and minimum width pull-in. Special method of grooving: any width, any depth of groove. Spiral groove is clean cut, free from rough edges, uniform in width and depth. Any number of grooves to the inch of width. Splices are soft and pliable. Lap is waterproof, strong, and processed to eliminate glazing. Sizes in all widths and lengths. Endless or prepared to make endless on the machine. Thicknesses vary from 2½ mm. (3/32") to 5 mm. (3/16").

BARNES BELTING BOOSTS PRODUCTION

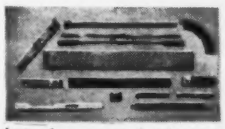
GAM-OIL For longer life on idler, high speed and open drives, small pulleys, overloads, shockloads, short centers. Resistant to oil, heat. Tanned by longtime process. High capacity. Specially curried. Very flexible. Hand processed by skilled workmen.





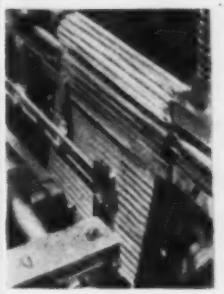
REEMAY For longer life on pivoted-motor-base, idler, high-speed and open drives, small pulleys, overloads, shockloads, short centers. Resistant to boiling water, oil, acid fumes, dry heat to 365° alkalies, dust. Highest tensile strength. Practically free of static electricity. Barnes Mineral Tan (Chrome) is an alternate choice to Reemay.

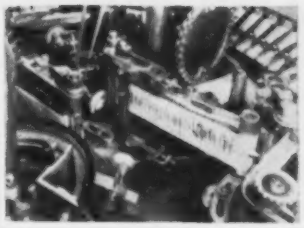
BARNES STRAPPING HAS EVERYTHING



Lug, harness, check, and picker straps of specially processed Hair-On leather and plain leather. Both types specially treated to meet the requirements of the particular function they are expected to serve. All Barnes straps made from prestretched leather. The Barnes Gam-Oil lug strap shown at the right typifies the high quality of our complete line. Our lug straps (four to five-ply thickness), are formed to fit the pickerstick accurately.

LUG STRAPS

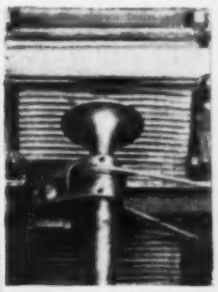


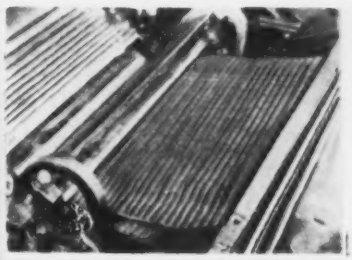


BRADFORD GILL NOBLE COMB

BARNES WORSTED APRONS
FOR BRADFORD COMB AND GILL BOXES

Even thickness throughout, minimum stretch, run straight, waterproof laps which are strong and flexible. Grip wool gently but firmly, carry it forward so you get a properly made yarn. Where aprons from substitutes and even from the best leathers have failed, Barnes Aprons MADE GOOD. Our research and many years of experience in handling worsted problems is the answer. Our apron leather is tanned in our own tannery from finest Foreign and Domestic Steer Hides. Only the most selective hide area used, free of all imperfections.





FRENCH GILL FRENCH COMB

FRENCH COMB AND GILL BOX APRONS

We buy only FINEST foreign and Domestic Steer Hides—free of grubs, barbed-wire scratches, slaughter cuts, other imperfections. We select and cut only the correct part for special requirements of your combs and gill boxes. Correct processing in our own tannery produces aprons at the lowest cost per pound of stock processed. Barnes aprons run straight with minimum stretch and are even in thickness throughout.

Keep alive your BELTING HORSEPOWER . . . .

Barnes Specialties include Belt Dressing and Preservatives, Wizard Belt Dressing Sticks, Liquid Dressing, Waterproof Cement, Belt Fastners and Blu-Skin Lacing (Chrome).

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE Textile Leather HOUSE

SINCE 1876

Tanners and Manufacturers

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

Yes WIESNER CONTINUOUS *are packaged*

● One source of supply provides undivided responsibility for guaranteed operation of Wiesner-Rapp Continuous Bleaching Ranges.

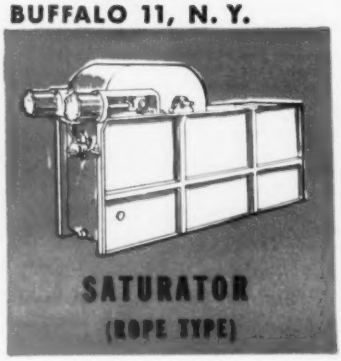
The advanced design and construction of all parts of these ranges produce a range that works as a coordinated unit to fully bleach at the astounding rate of 275 *yards a minute...132,000 yards every 8 hours.*

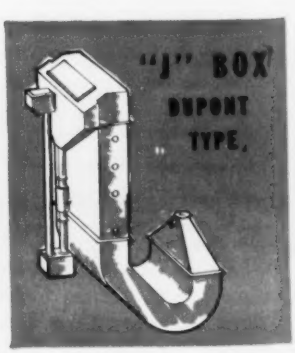
Users of Wiesner-Rapp Equipment have received many profitable suggestions from our engineers in adapting these *stainless* steel ranges to meet specific plant and production requirements. Our engineers will welcome a meeting with you. The size of your plant is no limitation. Hear the exclusive Wiesner-Rapp story first hand from our engineers by calling them in today to tell you how you can be ahead... stay ahead with...

THE WIESNER-RAPP CO., INC.

WR

BUFFALO 11, N. Y.





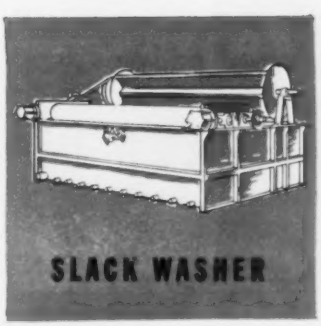
-RAPP

BLEACHING RANGES

RANGES . . . .

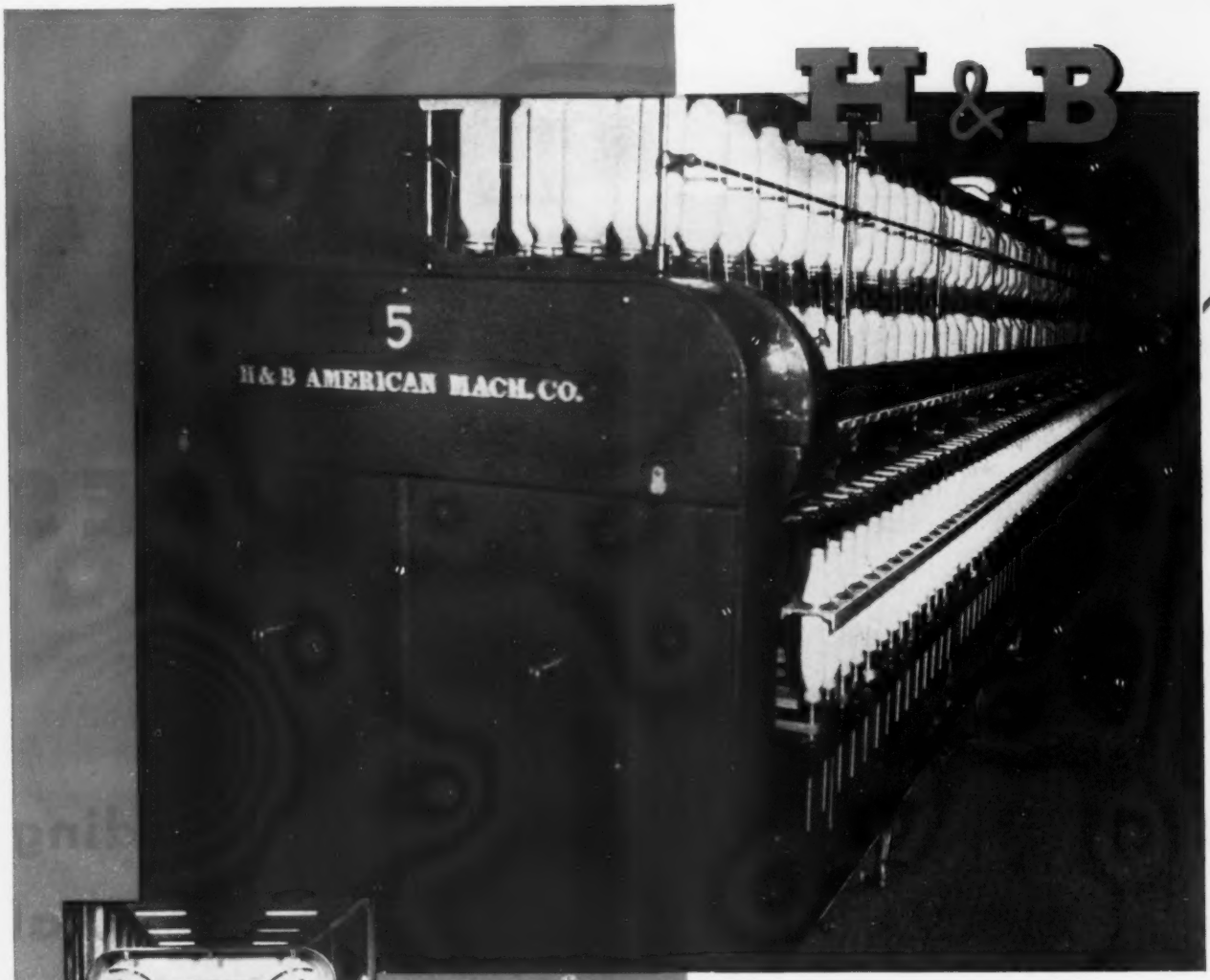
FROM SINGER TO WHITE BINS including all controls, electrical equipment, chemical feeds, piping, steam conditioning, mixing apparatus and bulk handling plants.

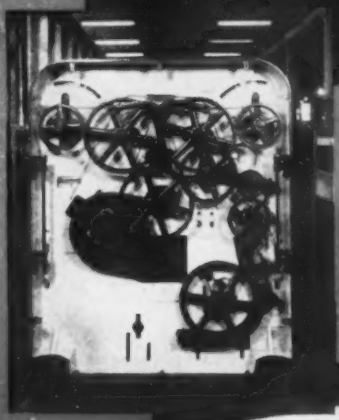
BE AHEAD ...STAY AHEAD WITH WIESNER-RAPP



PARTIAL LIST OF W-R RANGE USERS

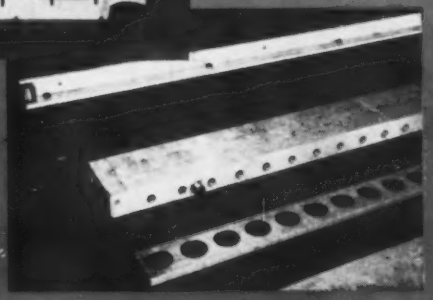
American Finishing Co.
Boott Mills
Cannon Mills, Inc.
Cluett, Peabody & Co., Inc.
Cranston Print Works Co.
The Drackett Company
Dominion Fabrics, Ltd.
Dutchess Bleachery
Pepperell Mfg. Co.





Head end showing Bijur Lubrication System and chain drive from cylinder to jack gear.

H & B Spinning Frames are now equipped with extruded aluminum ring rails, spindle rails and roller beams.



The bare truth is that the importance of the spinning frame, stripped of whatever drafting system is used on it, is too often minimized. Just as defects in a foundation may eventually weaken and render useless any building, so may anything less than a first class frame seriously affect your spinning production. H & B Spinning Frames, whether equipped with conventional 3-roll, 4-roll Long-Draft or Casablancas High-Draft systems, are designed and built for superior performance from the beginning.

H&B AMERICAN

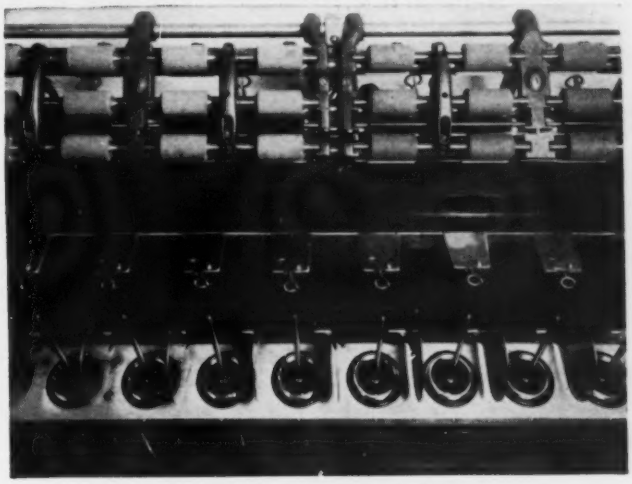
Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

SPINNING FRAMES

A Good Basis for Better Spinning

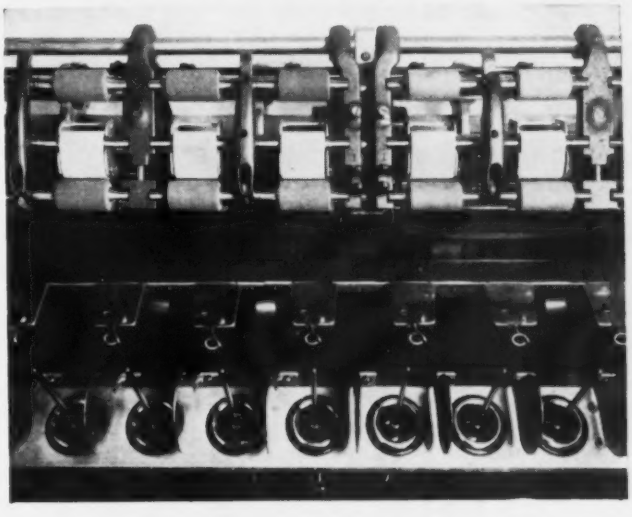
For mills who prefer the simplicity and economy of roller drafting, the H & B 4-Roll Long Draft System is ideal. It is equipped with a patented weighting assembly having a minimum of parts, streamlined for cleanliness, and without stirrup adjusting screws. This is a one unit interlocking assembly wherein weighting distribution is positively controlled by one weight for all drafting rolls.



Above — 4-Roll Long Draft System

Below— H & B Casablancas High-Draft System

For mills who prefer a belt system there is nothing better than H & B Casablancas. This system, with two endless belts to carry the roving, features automatic precision weighting, streamlined saddle, and a new one-piece cradle. It offers more possibilities for better quality yarn than does any conventional system.



Whatever your preference.

give it the added benefit of the H & B Spinning Frame.

MACHINE CO.

Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U. S. A.

BRANCH OFFICES

ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING

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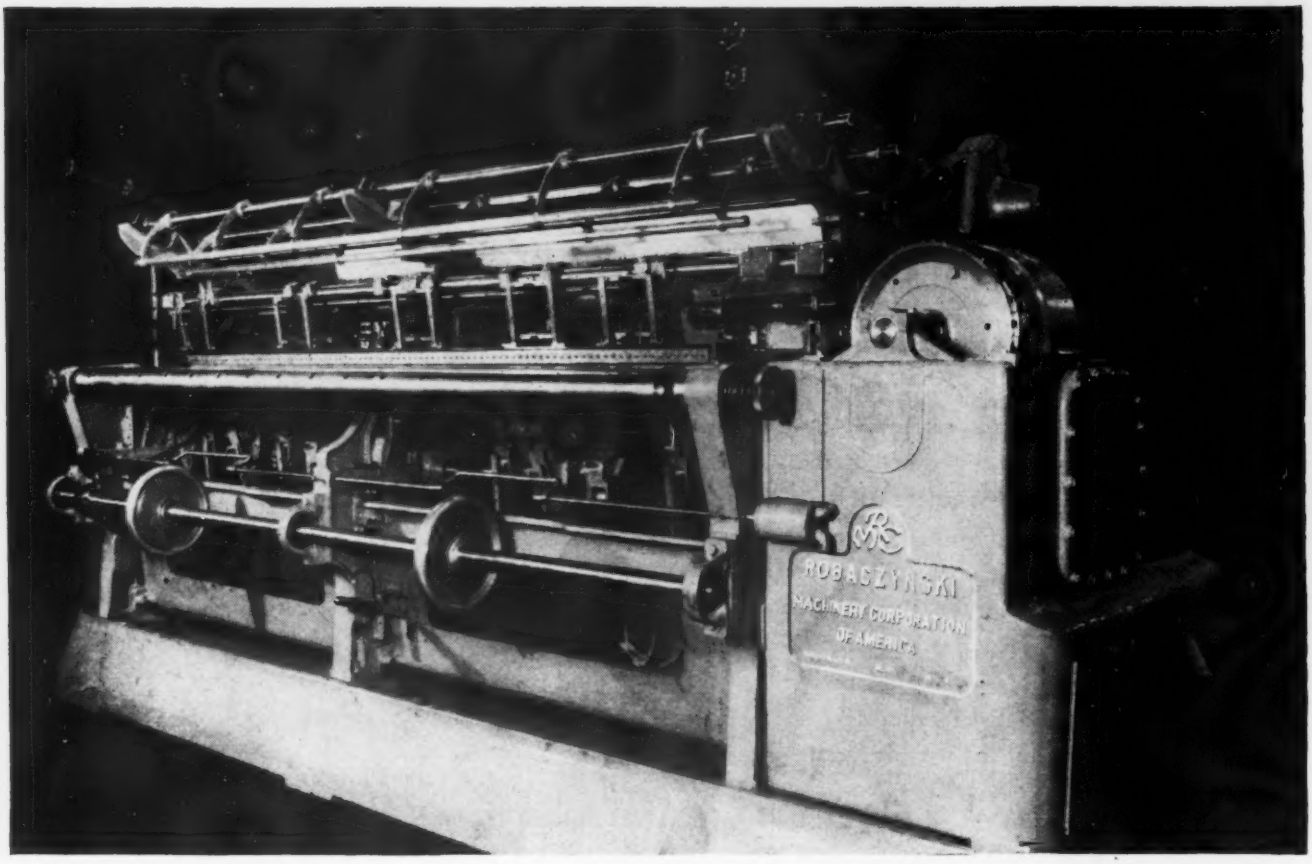
1201 JOHNSTON BUILDING



Now Ready—The New Model

Compare it with any Other Tricot

Features

- Fabric widths 90″—168″—180″.
- Massive foundations to minimize vibration.
- All adjustments—cam, stitch, truck are made from front of machine with indicators to save time walking around machine.
- Equipped with variable speed drive for any desired speed.
- Let off tensions so designed and sensitive they practically eliminate whipping of threads and the use of slay points.
- Cloth takeup so constructed it needs no attention once it is adjusted.
- Equipped throughout with antifriction bearings.
- All driving mechanism, including motor, totally enclosed.
- All parts easily accessible.

Robaczynski Tricot—World's Greatest ever Built for Quality and Quantity Production

See it in operation at our plant

Back of this new model tricot lies a lifetime of experience in the manufacture of knitting machines, with a thorough knowledge of what *you* want in *your tricot of tomorrow*—the Robaczynski Tricot. Now in production.

Every detail of this design and construction has been worked out to give you better quality and quantity of fabric with a long and carefree life for the machine.

Nor have we overlooked the operator. On this tricot he stands in a natural position with all parts easily accessible, all adjustments on the front of the machine with indicators to save his time running around behind it.

Seeing is believing so we hope every interested knitter of tricot fabrics will find it possible to visit our plant and see it operating under commercial conditions.

We also manufacture

Purl Stitch or link knitting machines. Hand or power operation.

V type flat knitting machine, hand or power operation.

Twin head Border machines.

Tubular band machines.

Send for complete information.

ROBACZYNSKI MACHINE CORPORATION

PURL STITCH (Links and Links) and FLAT KNITTING MACHINES

340 Ten Eyck St., Brooklyn, N. Y.

YOU know that reducing the waste of costly stock to a minimum is an important factor in your mill . . . the smaller the percentage of waste, the greater your production—and profit!

Precision-made Tuffer Card Clothing reduces waste at the beginning . . . reduces raw stock losses by improving the quality of your carding . . . increases the yield of your cards. The benefits of these primary advantages are felt throughout your entire mill. A proper start means better yarns at lower production costs.

A Howard Bros. representative will gladly examine your card clothing—and make workable recommendations that will cut down excessive stock losses.

HOWARD BROS. MFG. CO.
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C.
Branch Offices: Philadelphia, Pa., Blanco, Tex.
Direct Representation in Canada

A-9

TUFFER CARD CLOTHING *IMPROVES PRODUCTION ALL ALONG THE LINE*

CHARLOTTE
NORTH CAROLINA
★

NOVEMBER 21
1947
★

DOWD ROAD • CHARLOTTE, N. C.

A Cordial Invitation

We wish to extend a cordial invitation to all our friends and customers to be present at an "Open House" marking the official opening of our new Southern offices and plant in Charlotte, N. C. We hope you will come and see for yourself the increased facilities which are now at your disposal for keeping your machinery in first class condition with genuine Whitin equipment parts.

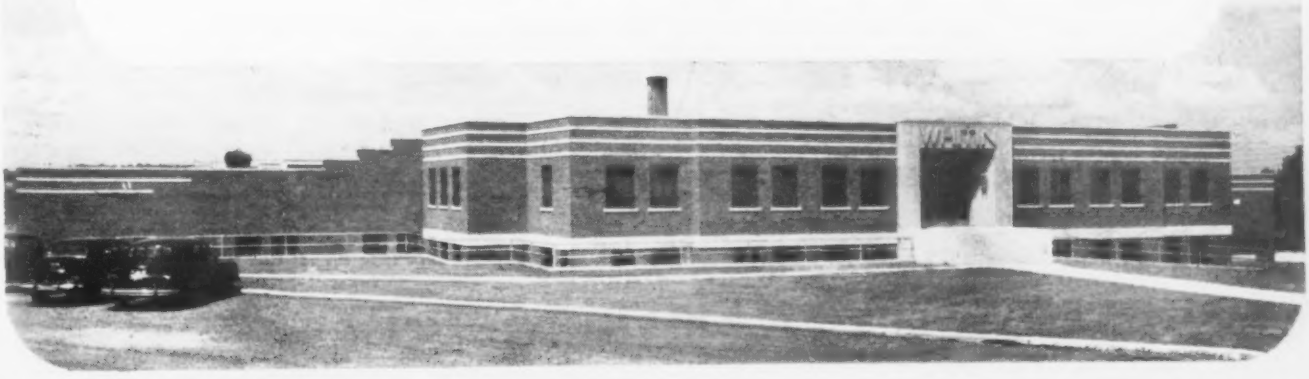
This is *your* plant. Its main product is SERVICE — the finest service possible on a wider variety of Whitin equipment. It is manned by skilled craftsmen working under the guidance of a Whitin-trained staff. Their sole purpose is to keep the Whitin machinery in your mills operating at maximum efficiency.

We believe that your visit will prove to be an interesting and instructive experience. We shall look forward to seeing you on November 21.

10:00 A.M. to 4:30 P.M.

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS



UNISTEL

SIX CAN Stainless Steel Dryer

All welded stainless steel dry cans constructed to the A.S.M.E. unfired pressure code for 35 pounds steam working pressure. Ball bearing equipped throughout with chain drive transmission. When you buy Stainless Steel Cylinder Dryers of any type, you are investing in high priced equipment from which you expect a definite return for many years. In order to realize your expectations, buy stainless steel quality.

Unistel dryers are manufactured in a shop that was built for and has always specialized in stainless steel fabrication.

A new machine for continuous dyeing, slashing, beaming of cotton yarns.

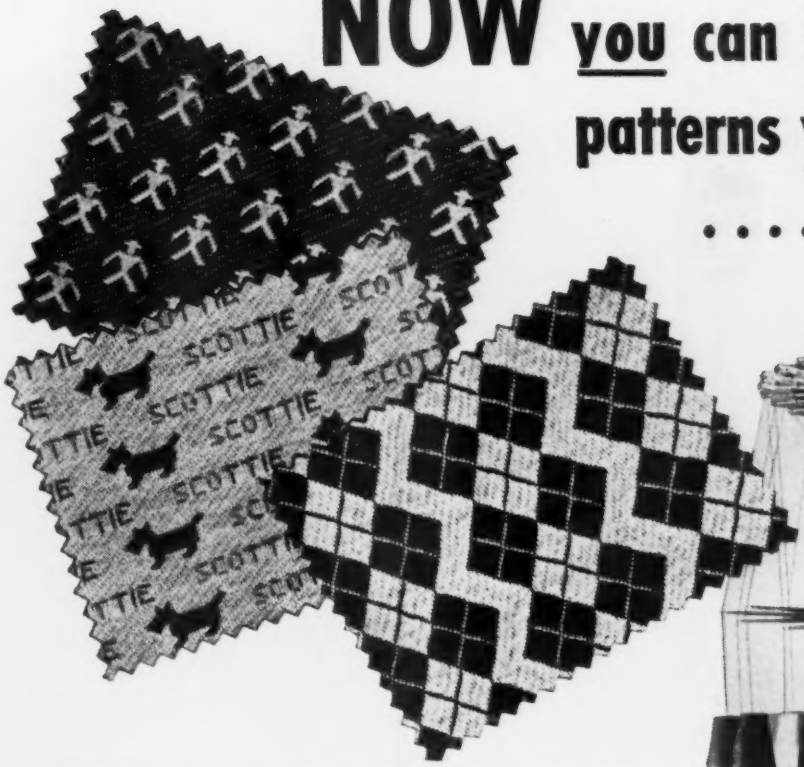
Engineers — Designers — and Builders of Back Dryers, Can Dryers, Slashers, Kettles, etc,

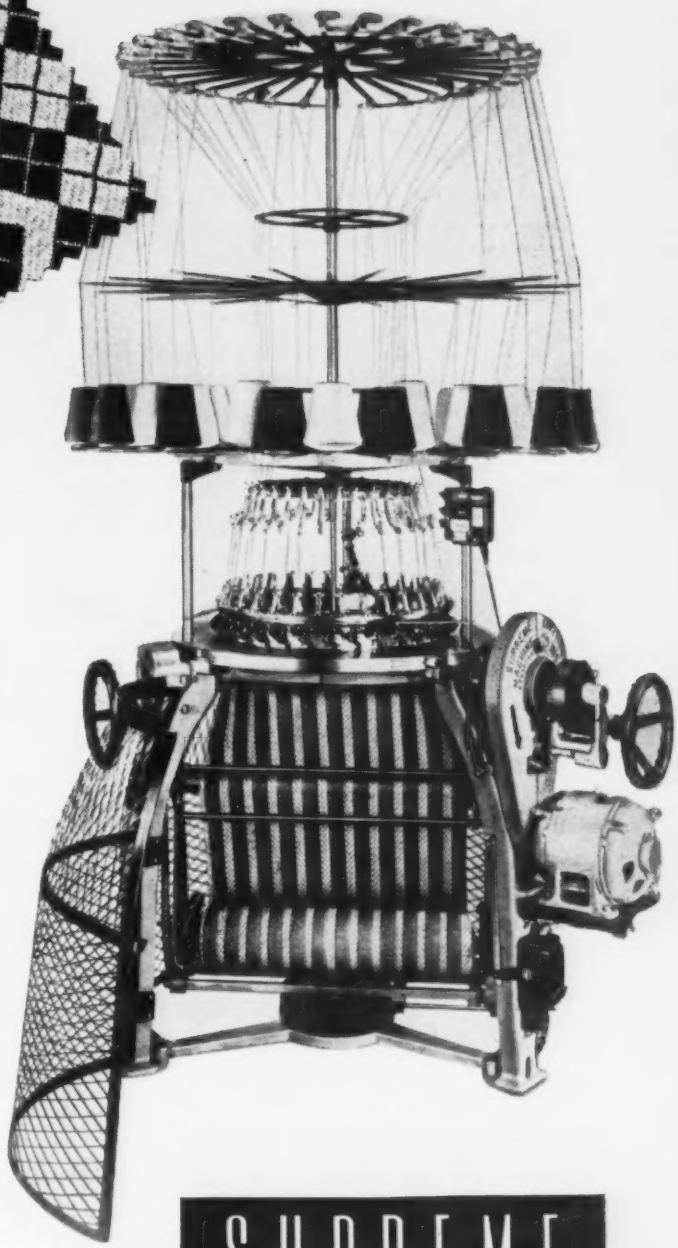
UNITED STEEL of AMERICA, INC.

30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

Canadian Representatives: United Steel Corporation Ltd. of Canada, Toronto

NOW you can knit widely spaced patterns with no loose floats ....on the MODEL ROF*





MODEL ROF "FLOATLESS" Pattern Wheel Machine gives you "The Rights" and ability to produce "Lombardeen"* fabrics simply and easily.

The New MODEL ROF gives you:

1 The ability to produce at 30 yds. per hr., multi-color fabric having precisely defined, widely spaced, solid color figures and fields . . . with each float "laid in" . . . tied securely to the back of the fabric without showing on the face.

2 One machine to knit and welt, knit and tuck, and welt and tuck on any or all feeds, with the same set of needles and pattern wheels, *without changing needles, pattern wheels or cams.*

3 Your choice of patterned and designed cloth, lay-in cloth, knit and welt cloth, solid plaited cloth or lace cloth.

4 Float and stretch control . . . you can vary or completely eliminate the float or "lay-in" to get different degrees of cloth tightness or stretch.

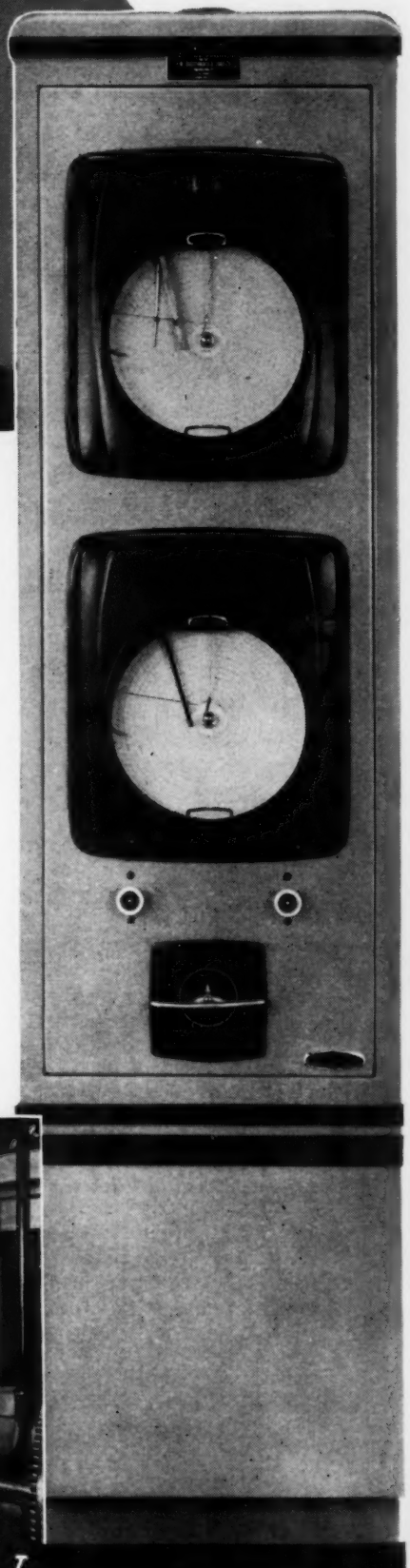
5 The license to produce unlimited "Lombardeen"* cloth on the ROF without paying yardage, poundage, or machine royalties.

A circular, latch-needle machine of sinker-top type, the new 24" diameter, 32 feed MODEL ROF is simple to arrange, set and operate. It gives you production versatility that enables your mill to keep in step with fashion changes. SK-103

SUPREME
KNITTING MACHINE CO., INC.
105 Johnson Ave., Brooklyn 6, New York, N. Y.

**The new MODEL ROF combines many exclusive Supreme patents with those of the well-known knitter-inventor, Vincent Lombardi. Each machine is licensed under U. S. Patent Numbers: 1,541,230 1,728,293 1,728,294 1,817,199 1,831,963 1,831,964 1,981,057 2,002,271 2,040,318 2,066,408*

BETTER WHITES

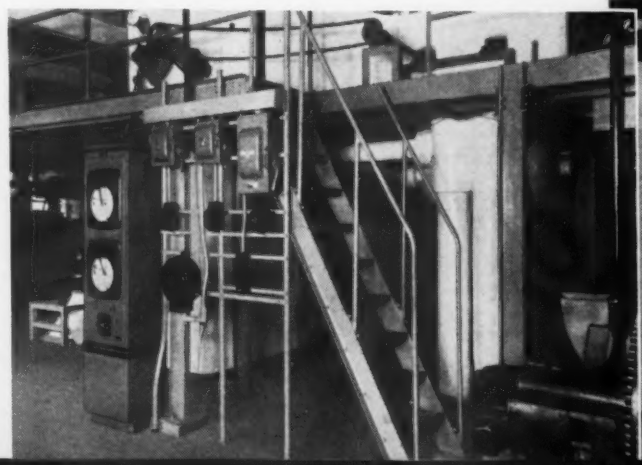


THROUGH FOXBORO CONTROL OF CONTINUOUS PEROXIDE BLEACHING

● This H. W. Butterworth & Sons Company installation at the Powdrell & Alexander bleach works, Danielson, Conn., is typical of more than a score of DuPont and Becco type Continuous Bleach Systems now equipped with Foxboro Controls. The factory-assembled control cabinet assures maximum uniformity of product, economy, and faster operation.

Foxboro Instrumentation has been a major factor in the development of these systems. Its better-engineered design provides continuous close control . . . saves steam, water, caustic, and peroxide . . . holds roll pressures constant.

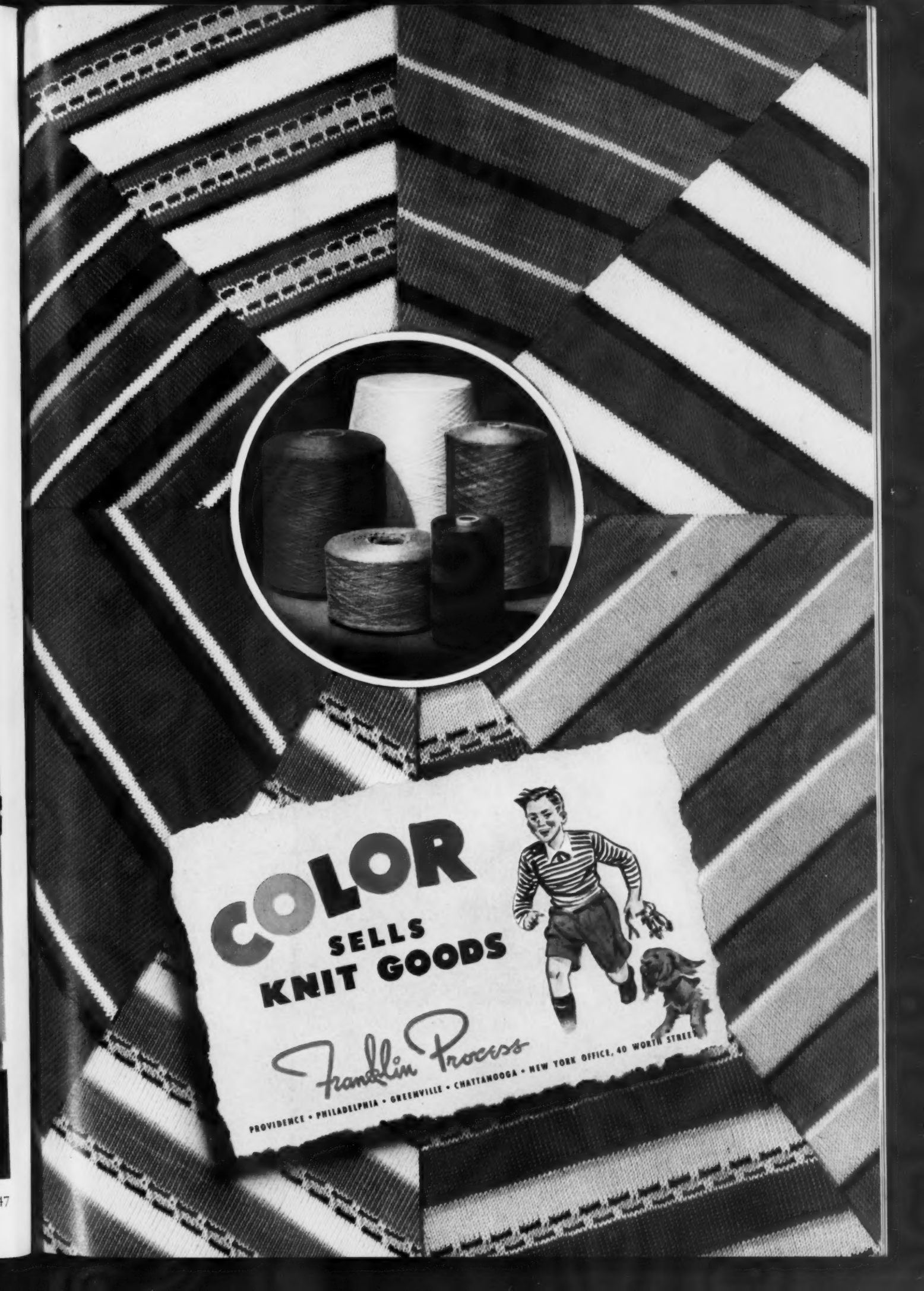
If your mill is considering continuous bleaching, discuss automatic control with a Foxboro engineer. Write **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U.S.A.**



Foxboro Control Cabinet for peroxide unit of this DuPont type Continuous Bleach System contains 3-pen Temperature Controller on the J box (top). One pen records and controls the heater tube temperature. The other two, record entering steam temperature and J Box storage temperature. The cabinet also contains a two-pen Foxboro Pneumatic Loading Pressure Recorder and Controller on the squeeze rolls before and after saturator (bottom). There is a similar control cabinet (not shown) for caustic unit.

RECORDING · CONTROLLING · INDICATING

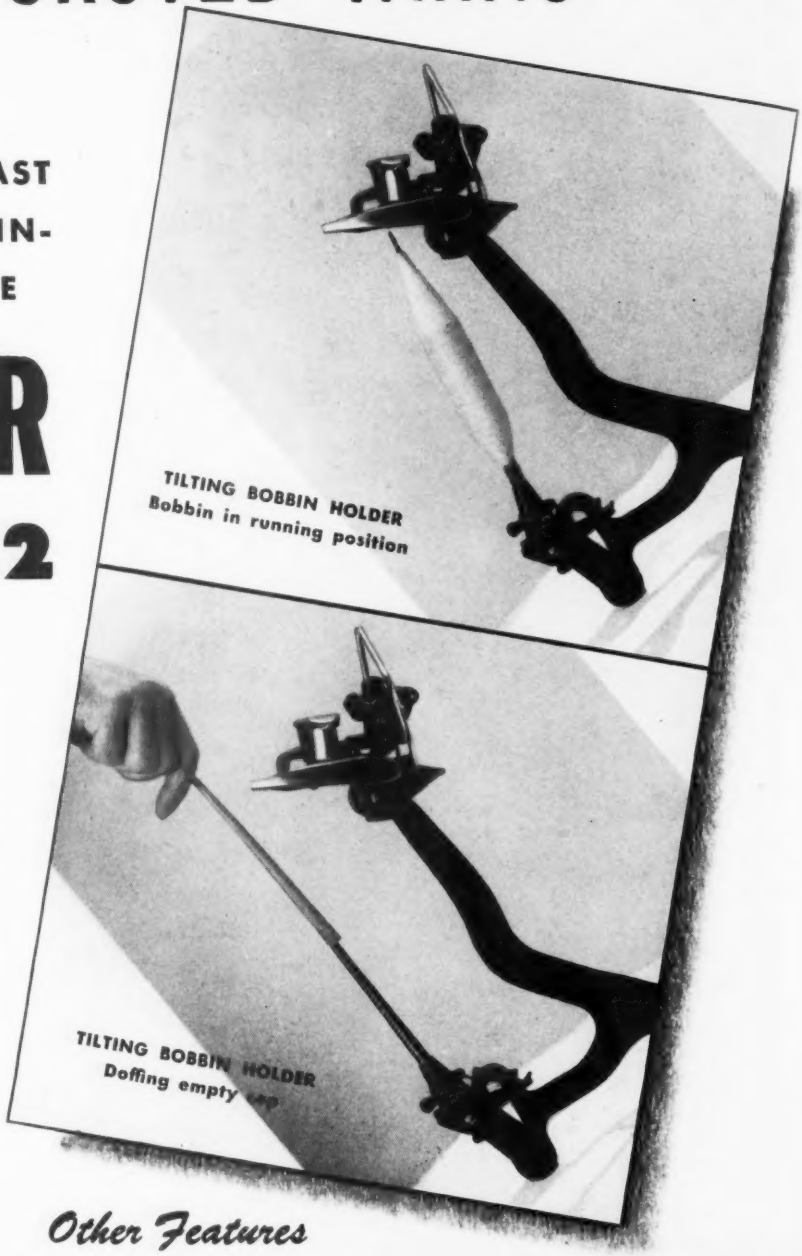
FOXBORO REG. U.S. PAT. OFF. *Instruments*


COLOR
SELLS
KNIT GOODS
Franklin Process
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • NEW YORK OFFICE, 40 WORTH STREET

FINE WORSTED YARNS

THEY UNWIND TO THE LAST INCH OF YARN WITH MINIMUM BREAKAGE ON THE

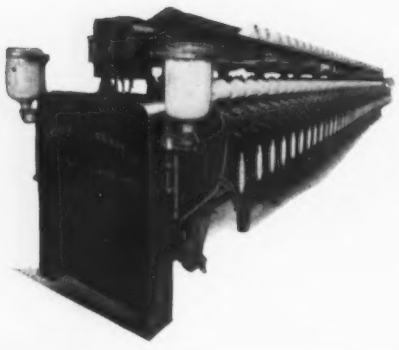
FOSTER MODEL 102



Here's Why:-

1. Supply is in line with and near enough to tension bracket to get a SINGLE BALLOON, reducing strain on yarn.
2. Supply skewer is long enough so that a mule cop will not jump off.
3. Although supply skewer swings out for loading, it always swings back to its original setting in exact alignment with tension bracket.

SEND FOR CIRCULAR A-95



Other Features

1. One well known mill is running 70's worsted yarn at 400 y.p.m., getting approximately twice the production as from obsolete models.
2. Several different types of self threading wax tension and slub catching attachments are available for this machine. They promote quick threading, even tension, and automatic inspection. Circular on request.
3. Machine may be equipped to wind same type of cone as produced by older models still in use, so that no segregation of cones is necessary.
4. Machine will produce any angle of wind from 9° to 18°,—important if you radically change the type or count of yarn.
5. May be equipped with conditioning attachment.

FOSTER MACHINE CO., Westfield, Mass.

SOUTHERN OFFICE, Johnston Bldg., Charlotte, N. C.; CANADIAN REPRESENTATIVE, Ross Whitehead & Co., Ltd., University Tower Bldg., 660 St. Catherine St., West Montreal, Quebec.

Can you find

More Than 16 Ounces

in a Pint Can

?

Many manufacturers have . . . especially when the can held a development sample of Flintkote Liquid Products.

They've often found the welcome answer to a troublesome requirement for coating, laminating, saturating, bonding or other fabrication problem.

We, at Flintkote, make a broad line of liquid asphalt, resin and rubber products . . . both in aqueous dispersions and in solvent form. In addition to standard products, we've helped meet many special requirements that called for custom-made materials.

As a result, Flintkote Liquid Products find wide use in many branches of industry. Some are used for rug and carpet backing, others as paper and textile laminants and sizings, curled hair binders, or adhesives.

Chances are, in our standard line . . . or in our research files . . . there's a solution to *your* problem. If not, our technical staff will be glad to work with you, to discover what you need.

A letter outlining your problem will put our complete research, development and manufacturing facilities at your disposal.

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Products for Industry

THE FLINTKOTE COMPANY, *Industrial Products Division*

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FLINTKOTE
INDUSTRIAL PRODUCTS

KOHORN

(Number 7 of a series)

This plant equipped in 1927

1919

1924

More Plants Than Any Other Organization

1935

FILAMENT RAYON
RAYON STAPLE FIBER
CELLOPHANE
PLANTS

Pioneers of the Rayon Industry

OSCAR KOHORN & CO., Ltd.

EXECUTIVE OFFICES
501 Fifth Avenue New York 17, N. Y.

1938

SERVICES RENDERED:

PLANT LOCATION:

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimate production cost and overhead, sales and profit.

ERECTION OF BUILDINGS AND MACHINERY:

(a) Furnish complete plans for buildings and machinery.
(b) Supply all production machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

STARTING PRODUCTION:

(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN, hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

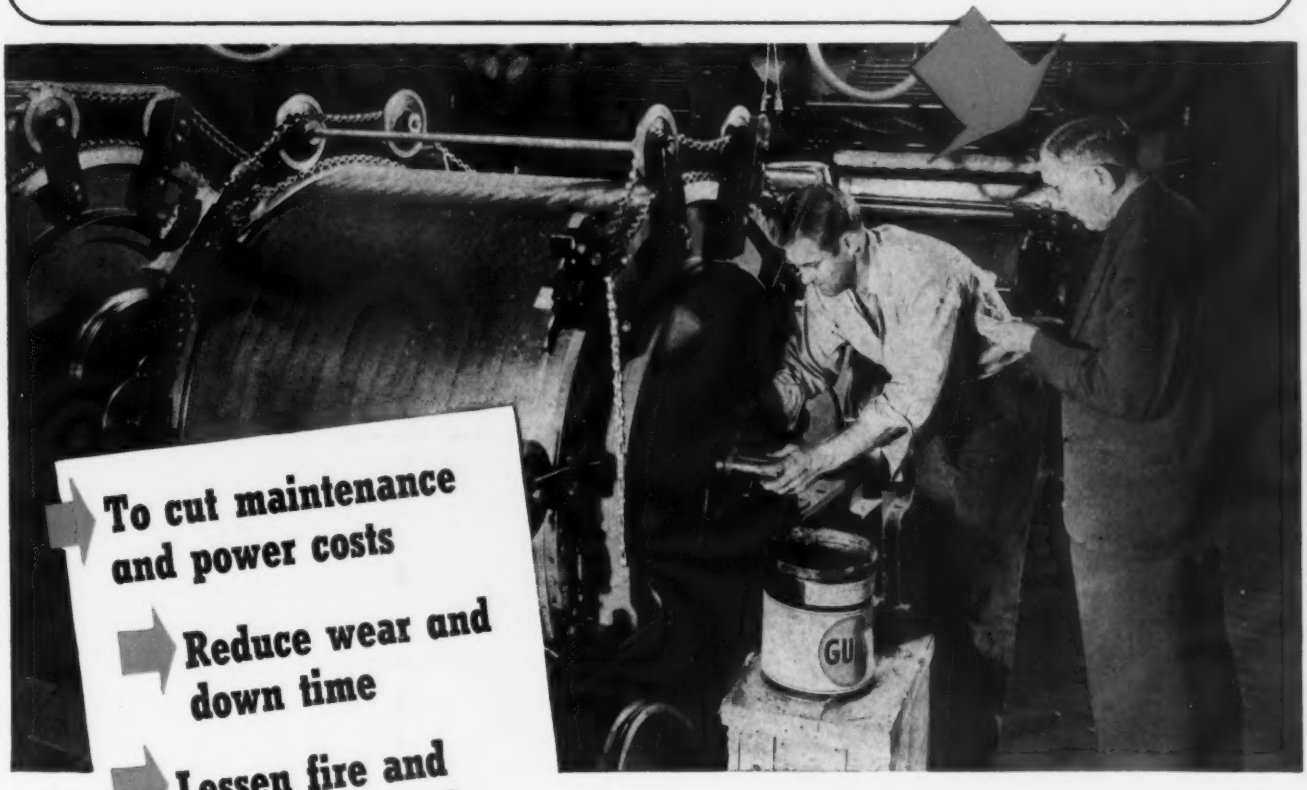
PLANT EXPANSION

(a) KOHORN'S interest in your plant, after it is turned over to you, continues. Consultation always available.
(b) Our latest patents are put at your disposal when plant expansion is contemplated.

1945

Let a GULF Lubrication Engineer

WORK WITH YOU— FOR YOU—


To cut maintenance and power costs
Reduce wear and down time
Lessen fire and accident hazard
Eliminate spotting and oily cuts

The Gulf Lubrication Engineer "in the picture" is checking lubrication of a new card in a large southern mill.

YOU GET THE FULL BENEFIT of lubricants as engineering materials when you use Gulf quality oils and greases as recommended by a Gulf Lubrication Engineer.

This lubrication expert is familiar with those operating conditions which affect the efficiency of your lubrication—thus he can quickly diagnose trouble, discover ways and means to increase production and reduce maintenance costs through the proper application of the right Gulf lubricants.

Avail yourself of this helpful engineering service when you install new equipment, when you make improvements to existing equipment, when your maintenance and power costs are high and when you encounter hard-to-solve lubrication problems.

Write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Engineer to call.

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
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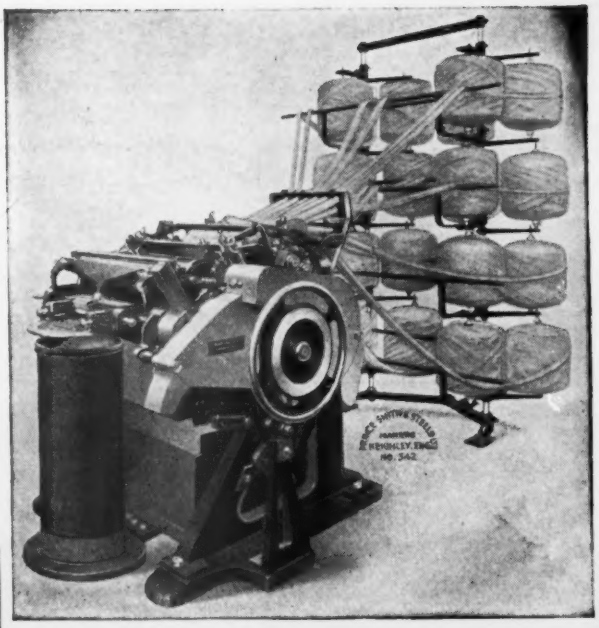
GULF INDUSTRIAL LUBRICATION

★ *High Production*
★ *Ease of accessibility and setting*
★ *Rigid construction*

features of



RECTILINEAR COMB WIDE MODEL

THE *rectilinear* OR FRENCH COMB

for wool and other fibres

FOR ALL YOUR MACHINERY REQUIREMENTS IN

worsted

We are able to offer complete plants on the French or Continental systems incorporating the above machine

Agents, U. S. A. and Canada—English system machinery. Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Agents, U. S. A.-French system machinery. The Blake Electrical Mfg. Co., 178 Atlantic Ave., Boston 10, Mass.

P.S.S.-5

PSS & LTD

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INCORPORATING TAYLOR WORDSWORTH & Co LTD

CONCESSIONAIRES FOR ALL WORSTED MACHINERY MANUFACTURED BY PLATT BROTHERS & CO. LTD. ASA LEES & CO. LTD.

KEIGHLEY
ENGLAND

DO YOU EXHAUST FUMES OR MATERIALS?

THIS "Buffalo"

INDUSTRIAL EXHAUSTER

Can Save You Money!

Why not investigate "Buffalo" Industrial Exhausters . . . and what they can do in your removal problems? Bulletin 3576 gives many helpful facts. Write for your copy!

. . . and hundreds of these husky new *continuous-service exhaust fans* ARE saving money in mills and plants. This is because "Buffalo" builds them to deliver more air per power dollar . . . and to stay on the job longer with very little maintenance cost.

Rigid, all-welded housing construction means added strength . . . and no rivet heads to impede air flow. Precision-balanced rotors give vibrationless performance.

"Buffalo" Exhausters are ready to cut your costs in material or fume removal. They are available with or without rubber lining, with material or air wheels, as desired.

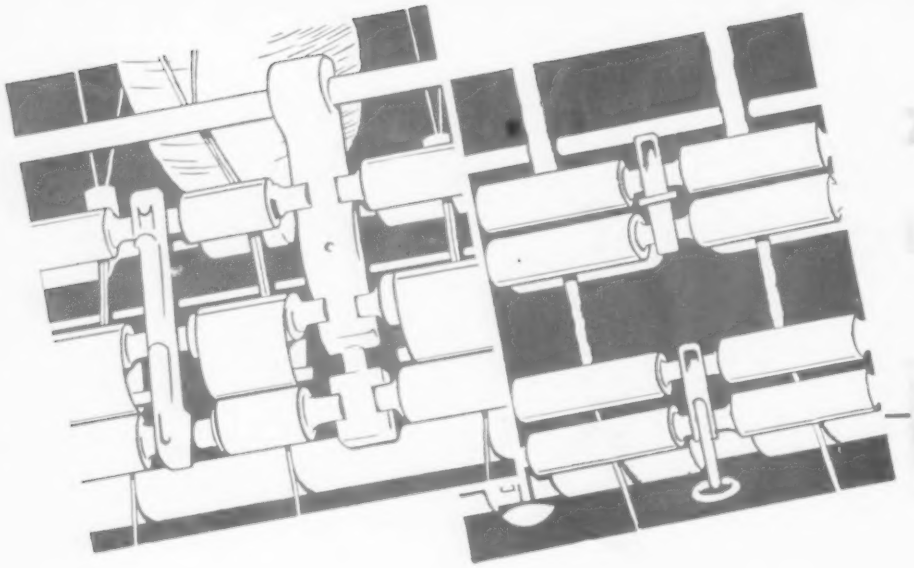
BUFFALO FORGE COMPANY

184 Mortimer Street Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo"

INDUSTRIAL EXHAUSTERS



Are you on cotton

Here's a synthetic cot that

Armstrong's NC 727 Accotex Cot . . . the most widely used general-purpose roll covering

Another covering in the Armstrong Line is the NC 727 Accotex Cot. Because it consistently produces high quality yarn, it is now being used by more mills than any other roll covering.

These cots give you the advantages of both synthetic rubber and cork. This combination of toughness and high friction provides the maximum amount of eyebrow resistance possible today in a synthetic cot. It also results in better drafting for high yarn strength with less slicking up. This means that Armstrong's NC 727 Accotex Cots do not need the frequent rebuffing that shortens cot life.

NC 727 Accotex Cots spin quality yarn longer than "straight" synthetic covers. They have a long initial service life. And they can be rebuffed as many as five or six times. Their resilience provides quick recovery from hard ends. They reduce lapping because they have little affinity for textile fibers and are non-sweating.

All Accotex Cots offer these extra advantages

GOOD START-UP — Accotex Cots are non-thermoplastic and resist flattening.

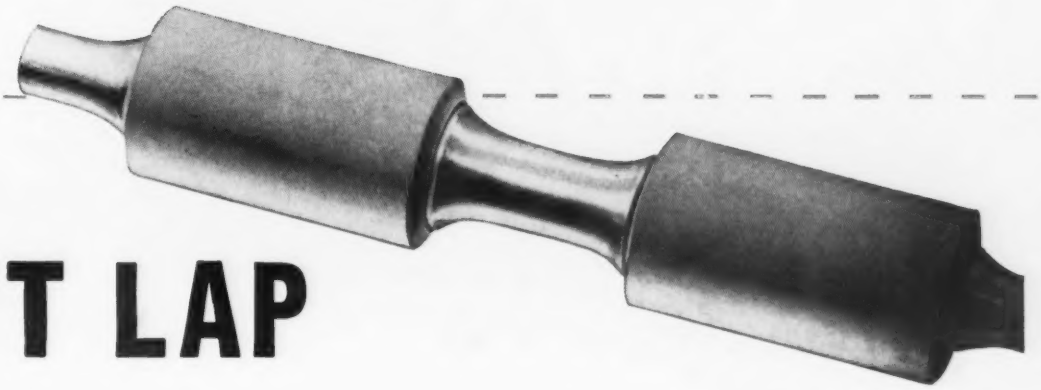
SOLVENT RESISTANCE—Accotex Cots are not affected by oil, water, dyes, or commonly used textile solvents.

SEAMLESS CONSTRUCTION—Accotex Cots have no seams, no structural weaknesses to cause failure in service.

QUICK ASSEMBLY — Accotex Cots are ready glued for easier, quicker assembly.

CORK COTS
ACCOTEX APRONS
ROLL SHOP EQUIPMENT

running wool or synthetic fibers system equipment?



WON'T LAP

Where lapping is a serious consideration when running wool or synthetic fibers on cotton system equipment, Armstrong's new J490 Accotex Cot is the roll covering to use. It has greater resistance to top roll laps than any other roll covering.

In drawing and roving operations, for example, you don't have to worry about fibers being pulled out of the sliver or roving and accumulating on the top roll.

In the spinning room, Armstrong's new J490 Accotex Cot helps send broken ends down to the scavenger roll where they belong. On long staple cottons, this superior covering helps keep long, wiry fibers spinning smoothly. Such fibers tend less to curl up and wrap around a J490 top roll.

The specially developed synthetic rubber compound used in the J490 cot is not affected by temperature and humidity changes. It won't sweat.

You can count, too, on extra long service from J490 cots. Their tough synthetic rubber compound has a long initial life. Service can be extended by rebuffing these cots as many as five or six times. For maximum freedom from eyebrowing, J490 cots should be used with revolving clearers.

Test Armstrong's J490 Accotex Cots on your frames now. See how they resist top roll laps and help produce better quality yarn. Ask your Armstrong representative for samples, prices, and additional information. Or write today to Armstrong Cork Co., Textile Products Dept., 8311 Arch St., Lancaster, Pa.

ARMSTRONG'S ACCOTEX COTS

A world-wide

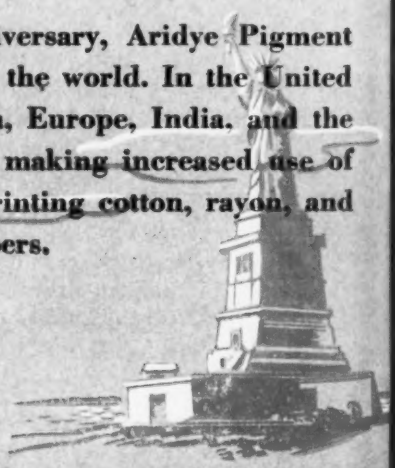
Aridye

Pigment colors

Research Laboratories of Interchemical Corporation where Aridye Pigment Colors were born.

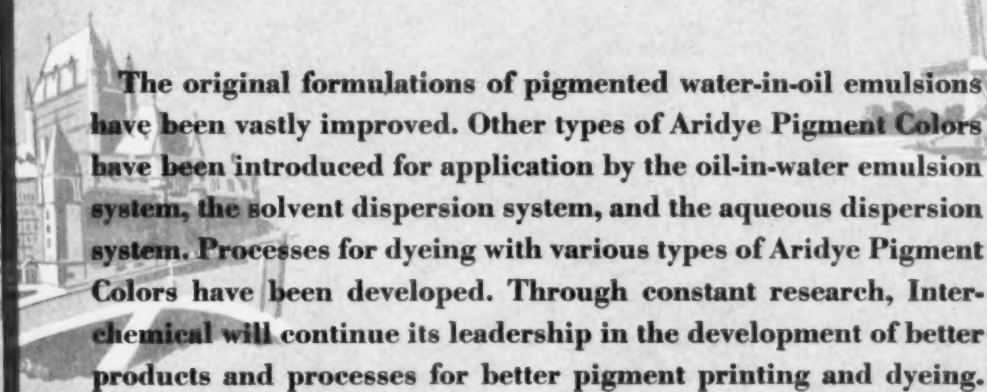
In the fall of 1937 a group of workers in the Research Laboratories of Interchemical Corporation, searching for better methods for coloring textiles, succeeded in developing entirely new types of coloring materials. These were pigmented water-in-oil emulsions. Christened Aridye* Pigment Colors, these new products proved to have many advantages over conventional dyes for textile printing.

Today, on their 10th anniversary, Aridye Pigment Colors are known throughout the world. In the United States, Canada, Latin America, Europe, India, and the Far East, textile printers are making increased use of Aridye Pigment Colors for printing cotton, rayon, and other natural and synthetic fibers.



reputation

IN 10 SHORT YEARS!

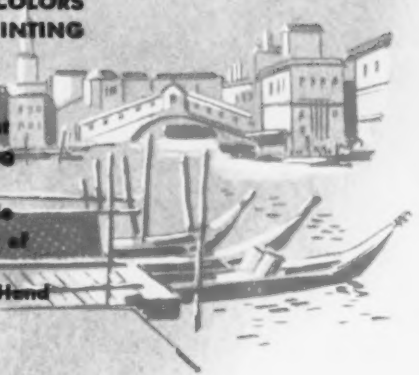


The original formulations of pigmented water-in-oil emulsions have been vastly improved. Other types of Aridye Pigment Colors have been introduced for application by the oil-in-water emulsion system, the solvent dispersion system, and the aqueous dispersion system. Processes for dyeing with various types of Aridye Pigment Colors have been developed. Through constant research, Interchemical will continue its leadership in the development of better products and processes for better pigment printing and dyeing.

A fully equipped organization stands ready to aid you in the solution of any printing or dyeing problem involving the application of pigment colors. And you are cordially invited to call on us at any time for technical service or information. Write to Interchemical Corporation—Textile Colors Division—Pioneers in Pigment Colors for Textiles—Box 357, Fair Lawn, N. J.

CHECK LIST OF IMPORTANT ADVANTAGES OF ARIDYE PIGMENT COLORS FOR TEXTILE PRINTING

- Sharpness of Mark
- Close Registration
- Fastness to Sunlight
- Fastness to Washing
- Bright Colors
- Uniformity of Shade
- Ease and Economy of Application
- No Impairment of Hand



INTERCHEMICAL CORPORATION

TEXTILE COLORS DIVISION, FAIRLAWN, N. J. • ROCK HILL, S. C. • PROVIDENCE, R. I.

*Reg. Trade Mark U. S. Patent Office

SOILAGE LOSSES TURN TO *Profits*

*42,600 yards per month saved with Precipitron**

In one large southern mill it was standard practice to shut down looms at each cut mark to clean the reeds. Precipitron eliminated this fifteen minute cleaning operation except at the time the warp was changed. Saved: five hours per loom per month, or 8,280 loom hours—equal to 42,600 yards of woven fabric—each month. The yardage savings alone in one particular type of fabric, had a dollar value in excess of $13,000 per month.

WHEN *Precipitron**

TRAPS "INVISIBLE DIRT"

The high cost of soilage is no longer a "necessary evil" in the textile industry. For Precipitron eliminates the smudge-causing air-borne carbon particles or soot, smoke, dust and dirt that result in off-quality, dark shades and seconds in finished production.

That's why so many leading textile mills have installed Westinghouse Precipitron as an integral part of the mill air conditioning and humidifying systems—for Precipitron affords three to five times the efficiency of ordinary mechanical air filters which trap only the larger particles. The smaller particles—which are as damaging as the larger ones —are trapped only by Precipitron which delivers air up to 90% clean by actual blackness test.

Investigate Precipitron now. It may make the difference between profit and loss in *your* operation. For complete information on how Precipitron can reduce soilage losses and upgrade and increase the production in your mill, call your nearest Westinghouse office.
Or write to: Westinghouse Electric Corporation,
Sturtevant Division, Hyde Park, Boston 36, Mass.

Westinghouse
Sturtevant
DIVISION

J-80014

* *Trade mark of the Westinghouse Electric Corporation, Sturtevant Division, Reg. U. S. Pat. Off.*

the BIGGER the BEAM the BETTER

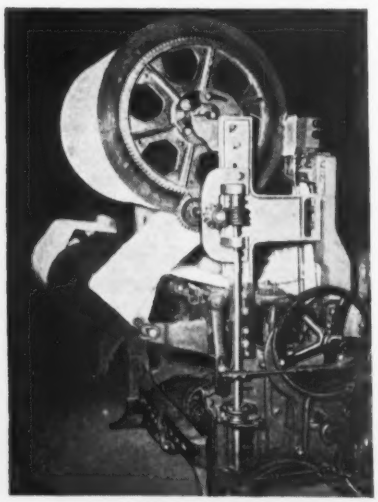
36" HEAD ON "D" LOOM

You Can Increase Yarn Capacity BY AS MUCH AS 444%

PRESENT LOOM BEAM DIAMETER – INCHES	INCREASED LOOM BEAM DIAMETER – INCHES											
	40	38	36	34	32	30	28	26	24	22	20	18
18	444.0	389.0	337.5	289.0	243.0	200.0	159.5	122.2	87.5	55.6	26.4	0
20	329.5	287.3	246.0	207.5	171.4	137.4	105.5	75.8	48.4	23.1	0	
22	249.0	214.2	181.3	150.0	120.5	92.8	66.9	42.8	20.5	0		
24	189.5	160.5	133.3	107.5	83.0	60.0	38.5	18	0			
26	144.4	120.0	96.8	75.0	54.4	35.0	16.9	0				
28	109.1	88.2	68.5	49.7	32.1	15.5	0					
30	81.0	63.0	45.8	29.6	14.4	0						
32	58.3	42.5	27.5	13.4	0							
34	39.6	25.7	12.5	0								
36	24.6	11.7	0									
38	11.1	0										
40	0											

EXAMPLE:

PRESENT BEAM – 20" DIA., 750 YARDS
LARGE BEAM – 26" DIA.
PERCENT INCREASE 75.8
ADD 100 to .758 1.758
CACAPITY OF 26" BEAM 750 x 1.75 1319 YARDS



BIGGER BEAMS

can be easily installed on top of the looms in weave sheds with narrow alleys. Operated with Roper, Bartlett or independent let-off

REDUCE RUN-OUTS!
CUT HANDLING!
SAVE LABOR!
INCREASE PROFITS!

Look for increased efficiency and PROFITS when you equip your mill to run larger beams and longer warp.

Large beams with greater yarn capacity increase loom running time... reduce runouts. Time-consuming warp tying and beam handling—while machines stand idle—are cut to a minimum.

Step up slasher and loom room efficiency and profits. Install larger beam heads now. Built for long life, these high grade heads are expertly designed and machined. Barrels of thoroughly seasoned woods turned straight and true... sealed against moisture.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

"Like moving your plant outdoors"

It took a lighting engineer to put into words the "lift" your workers will get from a clean, fresh coat of white paint on the ceilings and walls of your plant. Said he, in describing a job recently done in one plant with Barreled Sunlight:

"It's like moving your plant outdoors!"

He's right, too—for white ceilings and walls create an "indoor sky" which reflects and diffuses the light from your fixtures exactly as the sky reflects and diffuses natural sunlight.

This means greater lighting efficiency, *for white paint reflects far more light (80 to 90%) than paint of any other color.* And it means better seeing — the answer to greater productivity—because by distributing the light evenly it helps banish the glare, harsh shadows and extreme brightness contrasts which make seeing difficult.

But "any old white" won't do. If painting is to be a *sound investment* the white you buy must be easy to apply on large areas, give you good "yardage" without loss of hiding power and *remain* white for the longest possible time. That's why for years so many of America's leading plants have standardized on BARRELED SUNLIGHT.

U. S. GUTTA PERCHA PAINT COMPANY
20-K Dudley Street, Providence 1, R. I.

I'd like to know more about the partnership of Light and Paint. Please send me your free 32-page booklet, "Light and Color in the Work-World."

COMPANY .....

STREET AND NUMBER .....

CITY ..... ZONE ..... STATE .....

MY NAME IS .....

MY TITLE .....

© 1947 U. S. Gutta Percha Paint Company

the short cut to Proportioned Hosiery processing...

Paramold Forms!

Without unfastening any screws or bolts, individual forms may be lifted from the carriage shaft for quick size and style changes. There is no danger of forms dislodging during operation, as they are securely mounted and supported by a form carriage.

Paramold 29's separate form carriages permit processing two sizes or styles simultaneously.

Tilted working position of individual form relieves strain and fatigue.

Length markers, permanently impressed, are another exclusive feature of Paramold Forms.

Paramount Textile Machinery Co.

Main Sales Office • 538 South Wells Street
Chicago 7, Illinois

Paramold **Forms**

Easily Installed

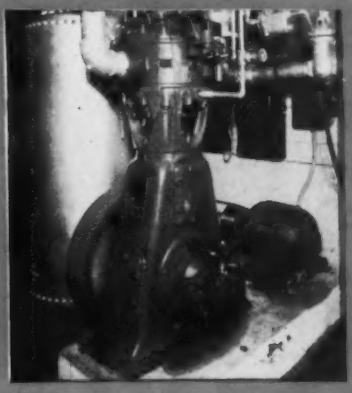
WG-9 REQUIRES ONLY A SMALL FOUNDATION TO GIVE TROUBLE-FREE, HEAVY DUTY SERVICE

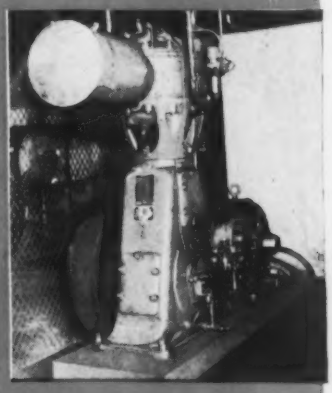
Vertical, single stage, double acting unit made in 11 cylinder sizes. Features simple block type foundation, full force-feed lubrication, anti-friction main bearings and long life "Dual Cushion" valves.

CYLINDER LINERS REPLACEABLE ON THE JOB

20 to 150 P.S.I.

153 to 822 C.F.M.





Two examples of compact installations are shown above. Note the simple block type foundations of small area for these Sullivan WG-9 models.

SULLIVAN

AIR COMPRESSORS

¼ to 600 H. P.

3 to 3656 C. F. M.

W&D 1 1310

Consult a Joy Engineer or write for Bulletin T-9

SULLIVAN DIVISION

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH, 22 PA.

Photos by Harry Pennington on the Gallagher Ranch Near Bandera, Texas

Goats DO Make Good Neighbors . . .

. . . to a textile mill using mohair. And where—except in Texas—can you find 91% of the nation's mohair* on the hoof? Where else can you find 20% of the nation's cotton and 24% of its wool? Plus an expanding production of synthetics made from the hydrocarbons of oil and natural gas.

Where else can you find these raw materials supplemented by such other industrial resources as an abundance of pure water; rail and deep-water transportation facilities; easy access to markets in big Texas, the Middle West, both coasts, and booming Latin America; a progressive group of strong financial institutions?

Where else can you find 58% of the country's natural gas reserves? Where else can you find an industrial fuel as economical, as clean, as dependable as natural gas?

Textiles are following chemicals southwestward. Be among the first to profit from the Texas Coast Country's advantages of location—build your new mill in friendly Texas.

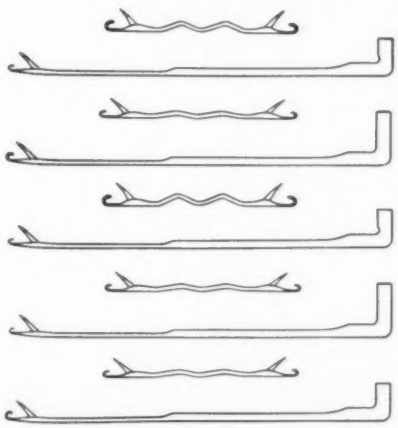
**Angora goats thrive in Texas, there are approximately 3,660,000 goats on Texas ranches.*

Let Us Tell You About Texas' Textile Possibilities

Come down to visit us, or write us for specific information on the Texas Coast Country's advantages for your plant. Your request will be kept in confidence. Address Research Department, Houston Pipe Line Company, Houston, Texas.

HOUSTON PIPE LINE CO.
Subsidiary of Houston Oil Company of Texas
GEO. A. HILL JR., President
Wholesalers of Natural GAS

know your NEEDLES FOR SPORTS ANKLETS



TORRINGTON provides almost as many types of needles as there are styles and designs of men's, women's and children's sports anklets. But in the *entire* line of more than 10,000 different types of Torrington Needles, there is NO variation in their excellent knitting qualities.

Every Torrington Needle is machine-made and machine-tested . . . every needle has the strength, temper, finish and accuracy of dimensions to consistently do the kind of job that *you* want—no matter what your knitting requirements.

It pays in *many* ways to standardize on the needles in the famous Red and Green Box.

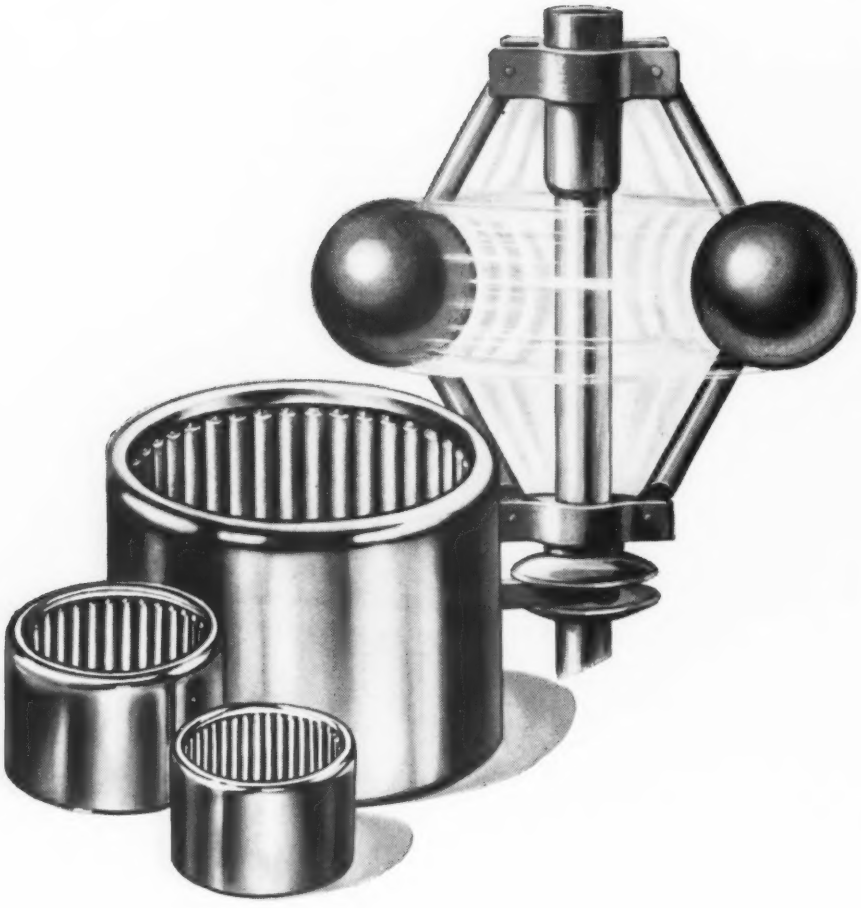
The Torrington Needles shown here are among the types commonly employed in the knitting of sports anklets.

THE TORRINGTON COMPANY

Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N.C. • Boston St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Avenue, Los Angeles, Calif.

There's a **TORRINGTON** **LATCH NEEDLE** *for every type of Knitting!*



Govern costs, too . . .

by keeping first cost down, simplifying design, fabrication and installation, and reducing operating and maintenance expense. These advantages can be secured

With Torrington Needle Bearings.

Their compact construction permits savings in size and weight of surrounding members. Machining the housing and installing the bearings are simple, speedy operations. Their low coefficient of friction provides economy in power consumption, while their efficient lubrication prolongs the life of the bearing with a minimum of attention.

If cost is one of the factors governing your product development, it will pay you to consider these Torrington Needle Bearing features.

THE TORRINGTON COMPANY

TORRINGTON, CONN. SOUTH BEND 21, IND.

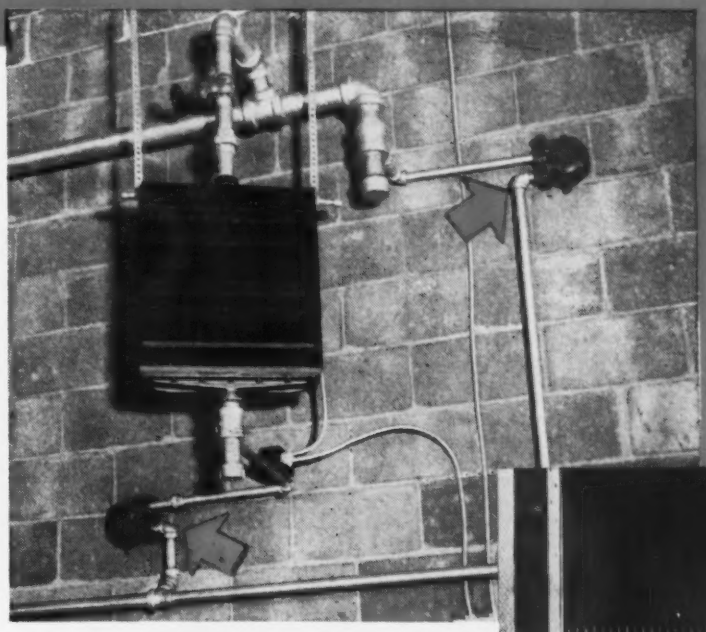
Offices in All Principal Cities

TORRINGTON BEARINGS

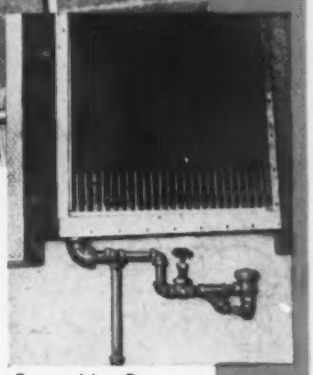
• NEEDLE • SPHERICAL ROLLER • STRAIGHT ROLLER • TAPERED ROLLER • BALL

Getting the Utmost

FROM UNIT HEATERS



Sarco Float Thermostatic Trap



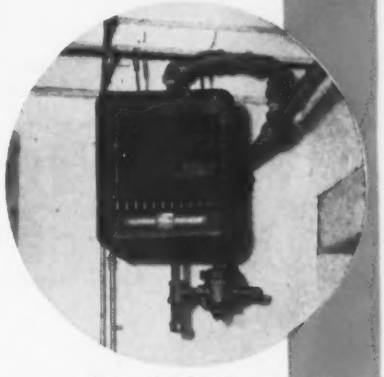
Sarco No. 9 Thermostatic Trap

Don't buy a nice battery of unit heaters and put on the first steam trap you think of. Get advice from your heating expert or the nearest Sarco man. Get the right trap first—and if you are having trouble with the help opening and closing windows with your present hookup, look into the question of the inexpensive Sarco Electric Controls.

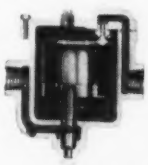
Sarco makes four distinct types of steam traps (float, bucket, thermostatic and liquid expansion). All are used successfully on unit heaters—under different conditions. Our unbiased advice is at your service.

It's the same with all heating installations. Most heating equipment today is highly reliable—it immediately becomes unreliable, inefficient and generally unsatisfactory the minute you install it without the correct accessories.

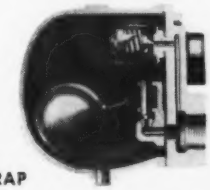
These and other questions involving about forty Sarco products which improve conditions and invariably save steam can be answered by the Sarco representative near you.



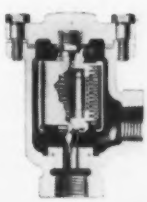
Sarco Bucket Trap



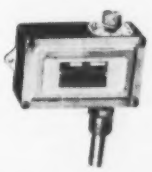
BUCKET STEAM TRAP



FLOAT THERMO-STATIC STEAM TRAP



No. 9 STEAM TRAP



IUT—ELECTRIC CONTROLS—LSU

174

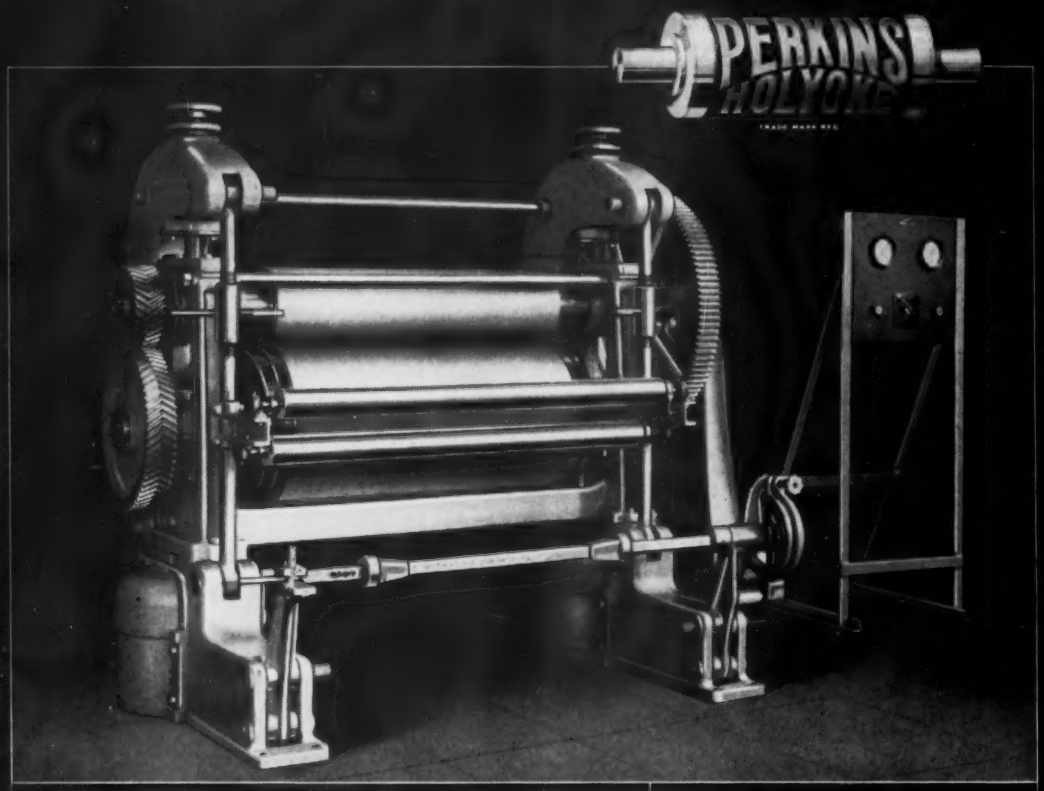
SARCO SAVES STEAM

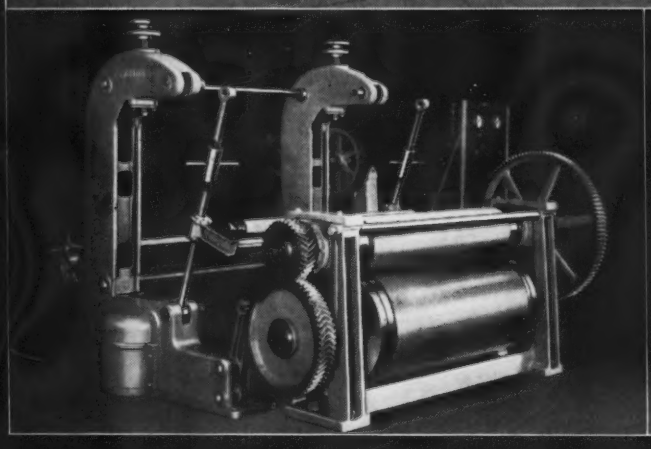
SARCO COMPANY, INC.

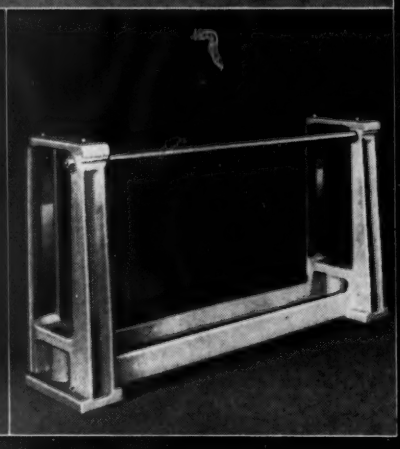
Represented in Principal Cities

Empire State Building, New York 1, N. Y.

SARCO CANADA, LTD., TORONTO 5, ONTARIO







EVERY PERKINS CALENDER is custom-made to meet local conditions, engineered for marked effectiveness, convenience, simplicity. For example, this two-roll 46" embossing calender shown with subframe and subframe removed. Foxboro air-pressure system. Rolls mounted in Timken anti-friction bearings. Helical roll connecting gears. There is no substitute for PERKINS quality.

B. F. PERKINS & SON, Inc.

HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

Scientifically Engineered TO TAKE A BEATING!

. . . so you can get cleaner, faster production; lower cost per loom hour of operation

Dayton's Reversible Drop-Box Picker is designed to take a terrific beating from today's high speed looms and yet last longer and give better shuttle contact than other type pickers. Daytons are manufactured under specially engineered "3-Point Density Control" specifications which result in a picker with the highest degree efficiency known. The extremely hard bearing surface around the spindle hole *stays round* . . . requires *no lubrication* and *won't wear egg-shaped.* To take impact and prevent wear, the area around the picker stick is made softer . . . of different, special compounds. And finally, at the shuttle contact, a still softer composition prevents shuttle point loosening and helps assure perfect throw. Dayton Reversible Drop-Box Pickers are one of a long line of loom supplies designed to help you produce better textiles more economically. Write today for complete product information to Dayton Rubber, Dayton, Ohio, or

TEXTILE PRODUCTS DIVISION, DAYTON RUBBER
Main Sales Office: Woodside Bldg., Greenville, S. C.
Factory: Waynesville, N. C.

Only Dayton Pickers are made to the THREE specifications listed below

HARD AT THE SPINDLE HOLE

A hard composition bearing surface is "built in" around the spindle hole of Dayton Pickers. They won't wear egg-shaped and no lubrication is required.

SOFT AROUND PICKER STICK HOLE

The exact amount of cushion is provided at the picker stick contact point to absorb the terrific impacts. Less wear on the stick and longer life for the picker.

STILL SOFTER AT SHUTTLE CONTACT

A still softer composition is used at the shuttle contact point. This eliminates shuttle point loosening, helps assure a perfect throw throughout the life of the picker.

Dayton Rubber

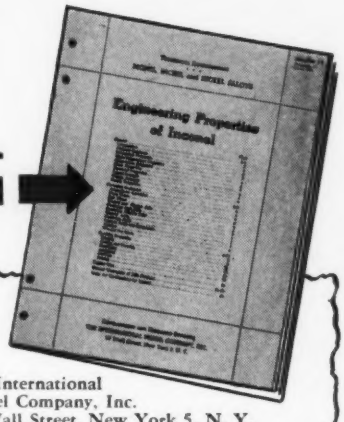
THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Write for it Right Now!

...Your Free Guide

to the Metal you'll be using more and more

GET THE FACTS...
MAIL THE COUPON



Brief, yet complete, this bulletin is an eye-opener for busy textile men.

In 16 pages of charts, graphs, illustrations and *facts*, the booklet tells about Inconel,* the rustproof nickel alloy that stands up in all dyeing processes.

Inconel is suitable for use with acid or acid chrome dyes, as well as with direct, vat, sulfur and developed colors. It is resistant to corrosion by dilute hypochlorites, sizing and similar compounds and solutions. It may be safely employed with peroxide bleaches.

Although it is both stronger and tougher than structural steel, Inconel is readily fabricated and welded. Use Inconel, and you'll have extremely rugged, long-lasting equipment.

Full information about this better construction material for textile equipment is contained in Technical Bulletin T-7, *Engineering Properties of Inconel.*

Mail the coupon for your free copy. Keep it handy for reference. Let it help you in locating places where Inconel can be used to advantage in your plant.

*Reg. U. S. Pat. Off.

The International
Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.

Please send my free copy of Technical Bulletin T-7, *Engineering Properties of Inconel*, without obligation.

Name.....

T.W. 11-47

Title.....

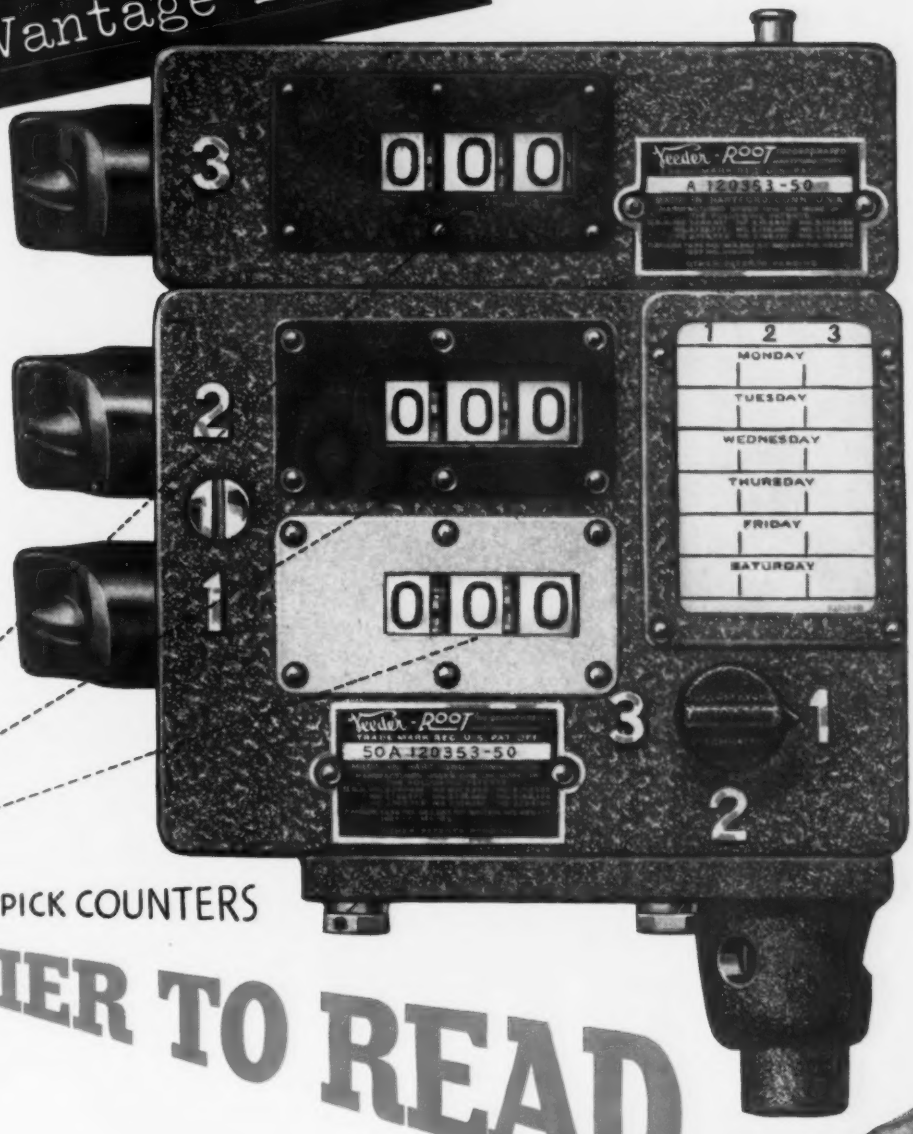
FILL IN — PIN TO LETTERHEAD — MAIL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall Street, New York 5, N. Y.

INCONEL*

(80 NICKEL—14 CHROMIUM)

Veeder-Root Vantage-Points



VEEDER-ROOT 2-3 PICK COUNTERS

ARE **EASIER TO READ**

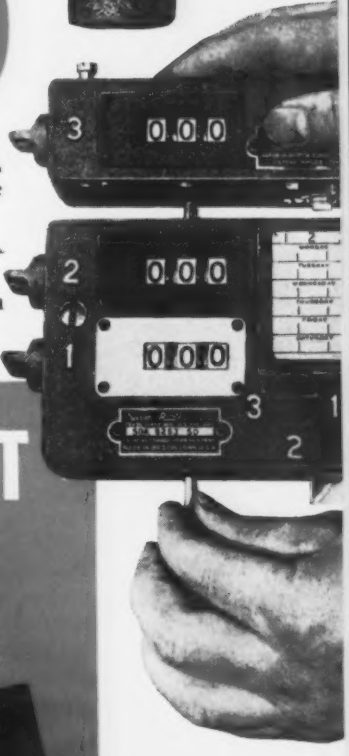
They're easier to read because the broad-faced wheels carry large, bold, lithographed figures . . . figures that are on the same plane with the surface of the wheel . . . *not sunken figures.*

So you can read your production "news" easily from several feet away . . . without eye-strain.

This is one of many Veeder-Root Vantage Points which add up to give you top value in Veeder-Root 2-3 Pick Counters. *Look at all you get:*

QUICK CONVERTIBILITY
YALE LOCK PROTECTION
COMPRESSION CLAMP DRIVE
ALL PARTS CORROSION-TREATED
STRONG, LOW-WEIGHT WHEELS
STEEL MOUNTING INSERTS
EASY-RESETTING KNOBS
COMPLETE INSTALLATION

Have your Veeder-Root Field Engineer show you exactly what these Veeder-Root Vantage Points mean.



VEEDER-ROOT 2-3 Pick Counters

Quickly Convertible from 2 to 3-Shift Operation . . . Right in Your Mill

VEEDER-ROOT INC.
HARTFORD 2, CONN.
GREENVILLE, S. C.

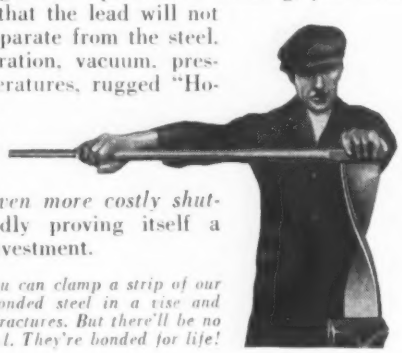
OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. In England: Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. In Canada: Veeder-Root of Canada, Ltd., Montreal.

Go "National" for Lead

"Homogeneous" Lead-Lined Acid-Handling Equipment gives you these advantages:

1 An Inseparable Lead Bond! National Lead's "Homogeneous" Lead-lined Equipment gives you just *that!* The lead lining or covering is permanently bonded to the steel, copper or brass of which the apparatus is constructed.

With the "Homogeneous" process of bonding, you have positive assurance that the lead will not creep, buckle or separate from the steel. Despite shock, vibration, vacuum, pressure or high temperatures, rugged "Homogeneous" equipment goes on doing its job . . . cutting down costly replacements *(and even more costly shutdowns)* . . . repeatedly proving itself a sound, profitable investment.

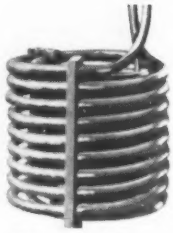


You can't part 'em. *You can clamp a strip of our "Homogeneous" lead-bonded steel in a vise and twist it until the steel fractures. But there'll be no parting of lead and steel. They're bonded for life!*

2 Durability at High Temperatures! Since no tin or tin-lead solder is used in the bonding of "Homogeneous" equipment, you can safely employ this equipment at temperatures closely approaching the melting point of lead itself (620° F.).

But that's not all! The "Homogeneous" bond holds fast even when subjected to rapid changes in temperature.

Most of the "Homogeneous" processing equipment we produce is designed for service at elevated temperatures. This includes not only lead-lined tanks, autoclaves and the like, but also lead-covered agitators, propellers and mixing devices of many different types.



For heating or cooling, *you'll find "Homogeneous" lead-covered copper coils at work in many industries.*

3 Designed to Your Order! National Lead's "Homogeneous" Lead-lined or Lead-covered Equipment is individually fabricated to your specifications. That is because acid-handling problems differ. Efficient, cost-saving equipment must be specially designed to meet given conditions.

Our Engineering Department offers you its full cooperation in the control of acid corrosion. We will be pleased to offer suggestions on the most economical and satisfactory way for you to utilize the protection of lead.

Specify "Homogeneous" Lead-lined or Lead-covered protection for...

Acid Car and Trailer Tanks
Acid Columns
Agitators
Autoclaves
Digestors
Heat Exchangers
Vacuum Tanks
Propellers
Heating and Cooling Coils

No Matter What Your Acid-Handling Problem...

Go "National" for Lead

National Lead is ready to consult with you and supply any type of lead pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. And behind every National Lead product . . . every National Lead recommendation . . . are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY
111 BROADWAY, NEW YORK 6, N. Y.
Offices and Plants in Principal Cities and Canada

Rubber Rolls

"No. 1" is the universal symbol for Top Grade Crude Rubber. But there is a superlative grade that is even better than No. 1. It is the world's finest Crude Rubber —from selected plantations of outstanding stock—for which Stowe-Woodward, Inc. pay a premium to use in your rolls. *Its symbol is "IX".* IX Premium Rubber is processed with Stowe-Woodward's IX Premium Craftsmanship to give you the finest rubber rolls that money can buy.

STOWE-WOODWARD, INC.

Craftsmen in rubber

NEWTON UPPER FALLS 64, MASSACHUSETTS
NEW YORK OFFICE, WOOLWORTH BLDG., NEW YORK 7

Stowe-Woodward Rolls are made on the West Coast by Huntington Rubber Mills, Inc., Seattle, Washington

Research at work

TO BRING YOU MORE

A Westinghouse Research Engineer studies the results of design changes for improved bearing lubrication. Constant fundamental research and experimental activities such as these, combined with the work of specialized engineers, account for the many Westinghouse contributions to the Textile Industry.

HOW WESTINGHOUSE RESEARCH BENEFITS THE TEXTILE INDUSTRY

Westinghouse research has made many contributions to the Textile Industry. These developments are the natural outgrowth of a *working* partnership, formed at the time of the early beginnings of mill electrification.

More than 50 years of Westinghouse textile experience is behind each development. From the new multi-motor slasher drive to *Precipitron, the electronic air cleaner—Westinghouse offers related equipment to step up production through better and healthier working conditions . . . uniform quality . . . with lower maintenance per dollar invested.

You'll be assured of *practical* and *economical* answers to your textile problem by calling your nearest Westinghouse office . . . or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-94758

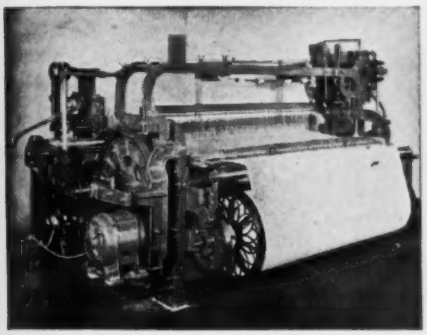
*Reg. Trade-Mark

PRODUCTIVE POWER

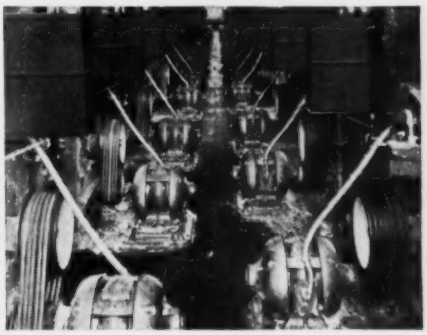
WESTINGHOUSE RESEARCH HAS ONE GOAL: TO HELP YOU PRODUCE FASTER, CHEAPER, BETTER, ELECTRICALLY

New ideas, new processes, new material for making electrical power more productive, flow steadily from the famous Westinghouse Research Laboratories. Many of these developments are at work now in *your* industry...developments—in electricity, in electronics, in processing—which promise many new advancements to help you produce *faster, cheaper, better,* electrically.

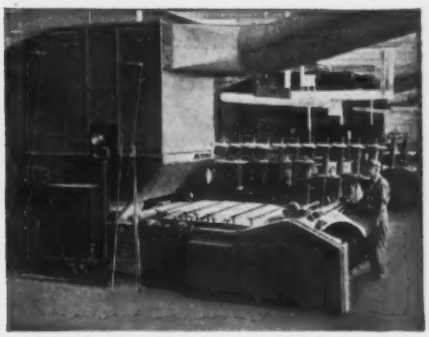
This broad basic research is an important added value to consider when you buy electrical equipment. A complete, separate Westinghouse Textile Industry Department, staffed by engineers intimately acquainted with Textile Industry problems, assures the prompt and *practical* application of new Westinghouse research developments to your special production techniques. Here are 6 Westinghouse contributions to the Textile Industry:



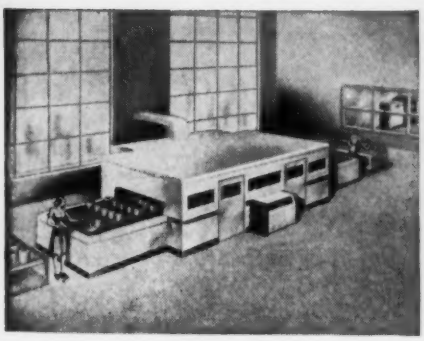
LOOM MOTORS—Quiet, cool, smooth-running motors that cut down radiation heating of your weave rooms—especially designed for peak output. This 1½ hp loom motor drives a modern woolen and worsted loom.



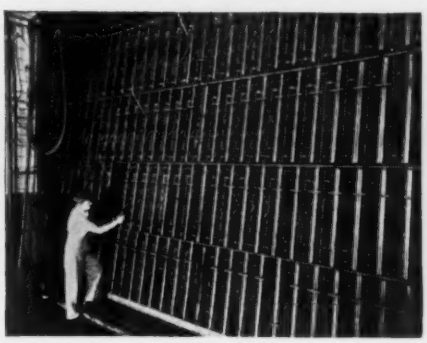
LINT-FREE MOTORS—"The cleanest running motor for textile service"—keeps its insides free of lint because it has *smooth* contours in the path of air circulation. These Westinghouse Lint-Free Motors drive spinning frames at high speed.



MULTI-MOTOR SLASHER DRIVE—The first major improvement in slasher drives for several decades. Rototrol is built into the system to guarantee uniform tension control . . . provides uniform yarn tension—diameter—beam density—better filler yarn spacing, less breakage, more warp on beam.



RADIO-FREQUENCY HEATING—Cuts twist setting and drying time, cake drying and dye package drying to a fraction of that required by conventional methods. Shown is a typical rayon dryer. Note control station at front of dryer.



PRECIPITRON—Keeps air clean and healthy—no "mill room fever"—picks out air-borne particles as small as 1/250,000 inch—eliminates dust, lint, soot, fumes, oil mist and smoke from the spinning, winding, weaving and drying operations—increases top-grade production.

LIGHTING—Modern fluorescent lighting provides maximum "see-ability" in this textile mill. Westinghouse "planned lighting" is added proof of the value of single-source responsibility.

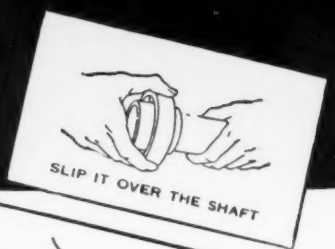
Westinghouse

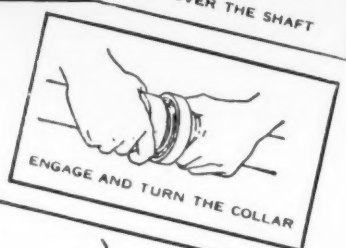
PLANTS IN 25 CITIES... OFFICES EVERYWHERE

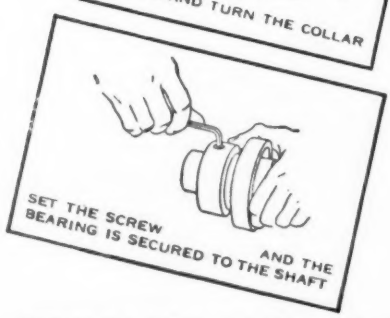
MORE PRODUCTIVE POWER FOR INDUSTRY

EASIEST OF ALL TO INSTALL

...and remove







The FAFNIR **Wide Inner Ring Ball Bearing** with the Self-Locking Collar

The Fafnir Bearing Company, New Britain, Conn.

FAFNIR **BALL BEARINGS**

MOST COMPLETE LINE IN AMERICA

first to develop a corrugated box for *both* SHIPPING *and* DISPLAY

SELL FROM THE SHIPPING BOX! As with most good merchandising ideas, this one is so simple, it's startling. H & D was first to apply it functionally to corrugated box design.

What's the result? A box which gives maximum protection to merchandise enroute . . . and keeps on working after it gets there. A box which, with the flip of a lid, "show windows" your products with colorful, arresting effectiveness on counter or shelf. It is one of many H & D "firsts," which have contributed so much to minimized damage in transit, reduced shipping costs, increased sales for hundreds of industries. The Hinde & Dauch Paper Company, 4710 Decatur St., Sandusky, Ohio.

LOOK TO

REG. U. S. PAT. OFF.

H&D

FOR PACKAGING "firsts"

HINDE & DAUCH · *Authority on Packaging*

FACTORIES IN: Baltimore 13, Maryland • Buffalo 6, N. Y. • Chicago 32, Illinois • Cleveland 2, Ohio • Detroit 27, Michigan • Gloucester, N. J. • Hoboken, N. J. Kansas City 19, Kansas • Lenoir, N. C. • Montreal, Quebec • Richmond 12, Virginia • St. Louis 15, Missouri • Sandusky, Ohio • Toronto, Ontario • Boston, Mass.

Page 3—
New Veelos Catalog

See how VEELOS on Reels CUTS V-BELT INVENTORY to a Fraction . . .

Tested, Proved and Adopted by American Industry

WHEN you start using Veelos, the link V-belt, you stop buying spare sets of belts for each drive. You just don't need them. With only 4 reels of Veelos you can replace as many as 316 sizes of endless V-belts. Any length belt for any drive is easily uncoupled from a reel, quickly made endless and installed. Never again will you see an unused V-belt deteriorating in stock. Reels of Veelos take up little storage space . . . simplify stock records.

These are just a few of the many outstanding advantages of Veelos on reels explained in the new Veelos catalog. You'll also learn why Veelos costs far less to install, cuts machine down-time, ends the woes of endless V-belts. *Send for your free copy right away.*

MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PENNSYLVANIA

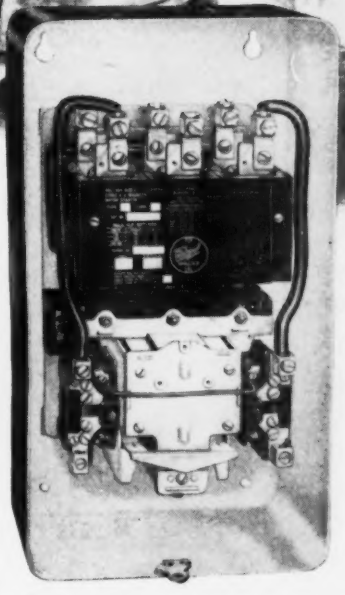
VEELOS
THE LINK
V-BELT

Adjustable to any Length
Adaptable to any Drive

Known as VEELINK outside the United States

Where maintenance means money, save with Federal NOARK Motor Starters!

Maintenance? ... forget it!

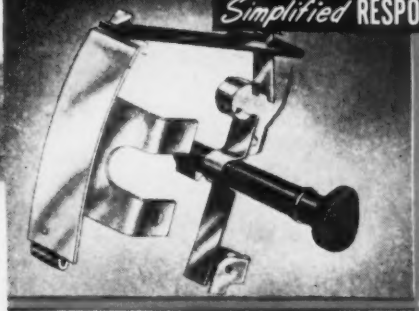


Where maintenance means money, save with Federal NOARK Motor Starters!

For all the money-saving, time-saving details, get in touch with the local Federal Engineering Office now!

Federal NOARK Motor Starters

Simplified RESPONSIVE ELEMENT

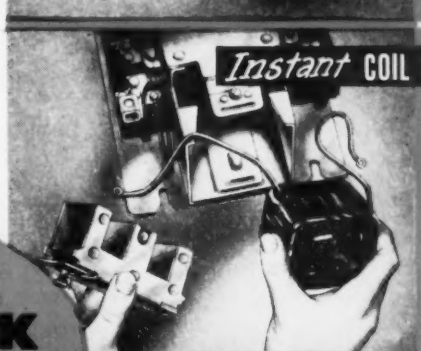


"This quick make-quick break relay, activated by a bimetallic strip, can never fail - - because there's nothing to get out of order. Resetting is positive. Just turn a knob for choice of manual or automatic reset.

Frictionless SOLENOID ACTION

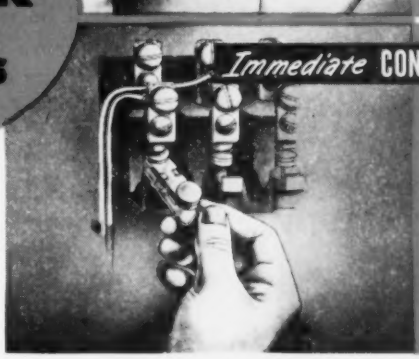
"Ball bearings eliminate friction . . . and trouble . . . in Federal NOARK Motor Starters. One moving part means only one chance for mechanical trouble . . . and, when that moving part rides on ball bearings, breakdowns and maintenance problems are a thing of the past.

Instant COIL REPLACEMENT



"Replacement of coils is a quick, simple operation on a Federal NOARK Motor Starter. 1—Press coil retaining spring up and pull out. 2—Loosen screw and lift movable magnet out. 3—Disengage coil leads from overload relay terminals - pull coil out. New coil goes in place in seconds.

Immediate CONTACT RENEWAL



"Renewing the solid silver contacts in a Federal NOARK Motor Starter is easy! Simply press one end of contact down, and it slides out of its groove. Slide in new contact, and the job is finished for keeps! It can't loosen or vibrate out!"

FEDERAL ELECTRIC PRODUCTS COMPANY, Manufacturers of a Complete Line of Electrical Products including Motor Controls • Safety Switches • Service Equipment • Circuit Breakers • Panelboards • Switchboards • Bus Duct

EXECUTIVE OFFICES: 50 Paris Street, Newark 5, N. J.
Plants: Hartford, Conn. Newark, N. J. St. Louis, Mo. L. I. City, N. Y.

Here's the Most Costly Goose You Can Cook!

Here lies (in how many mills?) the golden goose of weave-room efficiency. How could it have been killed?

By failure to study, to teach, or to understand the new features of new C&K Looms.

By lack of appreciation of the importance of maintaining proper temperature and humidity.

By sloppy winding so yarn snarls coming off the bobbin and stops the loom.

By careless sizing of warp and conditioning of filling.

By inadequate maintenance in the weave room.

If *your* goose is in danger of "cooking," there's only one way to save it — by friendly and informal (but thorough) education of your entire organization. It will be worth the effort for modern C&K Looms do improve working conditions, earning power, the security of everyone's job, and insure the future prosperity of the mill.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N.C. • ALLENTOWN, PA.

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

between Today's Knowledge . . . and Tomorrow's Looms

. . . with *Condor* Whipcord Endless Belts

On open drives where it's possible to install endless belts, Condor Whipcord Endless Belts are "unbeatable."

Endless-wound Whipcords embedded in slow-aging Flexlastics, keep these belts running true and cool at all speeds. They are prestretched during manufacture so that practically no take-up is necessary in operation.

The wear-resisting cover is spliced with Manhattan's patented Extensible-Tip. No separation takes place. Atmospheric conditions cannot penetrate to cause stretch or shrinkage. These features are important where accuracy in speed and power are necessary to good machine performance.

Condor Whipcord Endless Belts combine high tensile strength, optimum flexibility and accuracy of manufacture. You "Save on the Long Run" that these belts give you. Ask for Bulletin 6869-C.

Manhattan's complete line of rubber products for the Textile Industry is consistently dependable — outstanding in quality. Make MANHATTAN your choice.

("Flexlastics" is exclusive with Manhattan)

RAYBESTOS R M MANHATTAN

RAYBESTOS-MANHATTAN INC.

Keep Ahead with Manhattan

MANHATTAN RUBBER DIVISION **PASSAIC, NEW JERSEY**

For Better Continuous Extrusion Takeup...

ONE COMPACT MACHINE DOES THE *Whole Job!*

That's all it takes—just *one* compact machine to perform all the functions involved in continuous extrusion takeup operations. There is no need for separate capstans, lineshafts, tension stands or other propelling and winding equipment.

This new type constant tension continuous takeup with integral capstan and drive was developed as the result of many years of experience by IOI engineers in the design of winding equipment.

The machine features an adjustable constant tension reel drive and an ingenious and efficient system of loading and unloading reels without interrupting the winding process. A cantilevered demountable alloy shaft assembly makes reel loading and unloading a simple and easy operation that eliminates the possibility of damaging the reel flanges.

Precision traverse mechanisms of various types developed by IOI to level lay wire provide either automatic or manual crossover from full to empty reel. Standard traverse for high speed extrusion operations, as illustrated above, has single large diameter reversing screw with wide lay range and stroke adjustment.

For smooth propulsion of wire tubing or monofilament, IOI takeups employ large, easily threaded, positive grip driving capstans with fleeter sheaves. Capstans are lightweight, precision-machined, and balanced dynamically for top operating speeds. Capstan and reel drives are hydraulically synchronized so that one speed adjustment controls both.

For complete detailed information on this new takeup machine—as well as other recent IOI developments in continuous extrusion equipment—write for "Blueprint for Industry" Part IV, fully illustrated with photographs and engineering drawings. It's free for the asking.

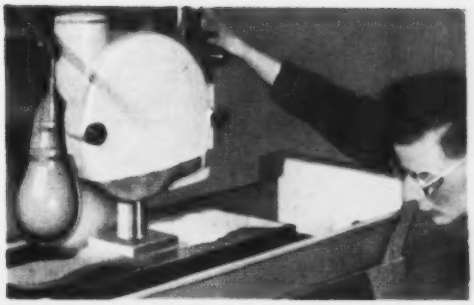
INDUSTRIAL OVENS, INC.

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON W.1, ENGLAND

"... **COLOR CONDITIONING** makes the Kirsten Plant a better place to work in ... contributes to maintaining production at high, rigid standards of quality. Employees have recognized the advantages of working in a plant that is Color Conditioned. This has been proved by high morale and exceptional efficiency." **KIRSTEN PIPE COMPANY, Seattle, Wash.**



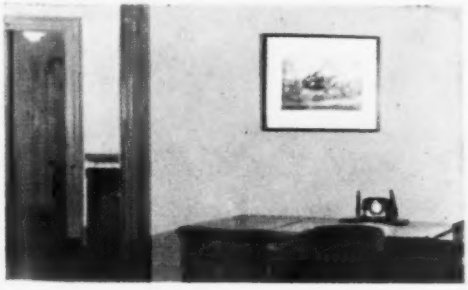
VISIBILITY. Color Conditioning lessens eyestrain and fatigue by reducing glare. Provides the correct degree of "brightness" within the worker's field of vision.

SAFETY. Du Pont Safety Color Code helps prevent personal injury by "pointing up" hazardous areas. Colors and symbols also indicate location of first-aid and fire protection equipment.

Du Pont Color Conditioning

Increases production and improves quality

MORALE. A cheerful, pleasant environment gives workers a lift ... pays off in better work. Color Conditioning in washrooms, cafeterias, etc., helps promote good employee-management relations.



FOR EVERY INTERIOR. Every part of your plant can gain through Color Conditioning ... stairways, offices, corridors, assembly rooms, etc. This proved painting plan gives an agreeable, efficient atmosphere to every interior.

HUNDREDS of industrial plants are today confirming the value of Du Pont Color Conditioning in boosting employee productivity. This scientific painting plan contributes to workers' efficiency, safety, comfort, and morale. By helping them see better, feel better, and work better, it increases output per man-hour ... helps reduce maintenance costs. Learn how Color Conditioning can bring these same benefits to *your* plant ... send coupon below to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Del.

DU PONT
REG. U.S. PAT. OFF.

Color Conditioning

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Send for free new 32-page book, "Color Conditioning for Industry"

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Firm _____

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L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

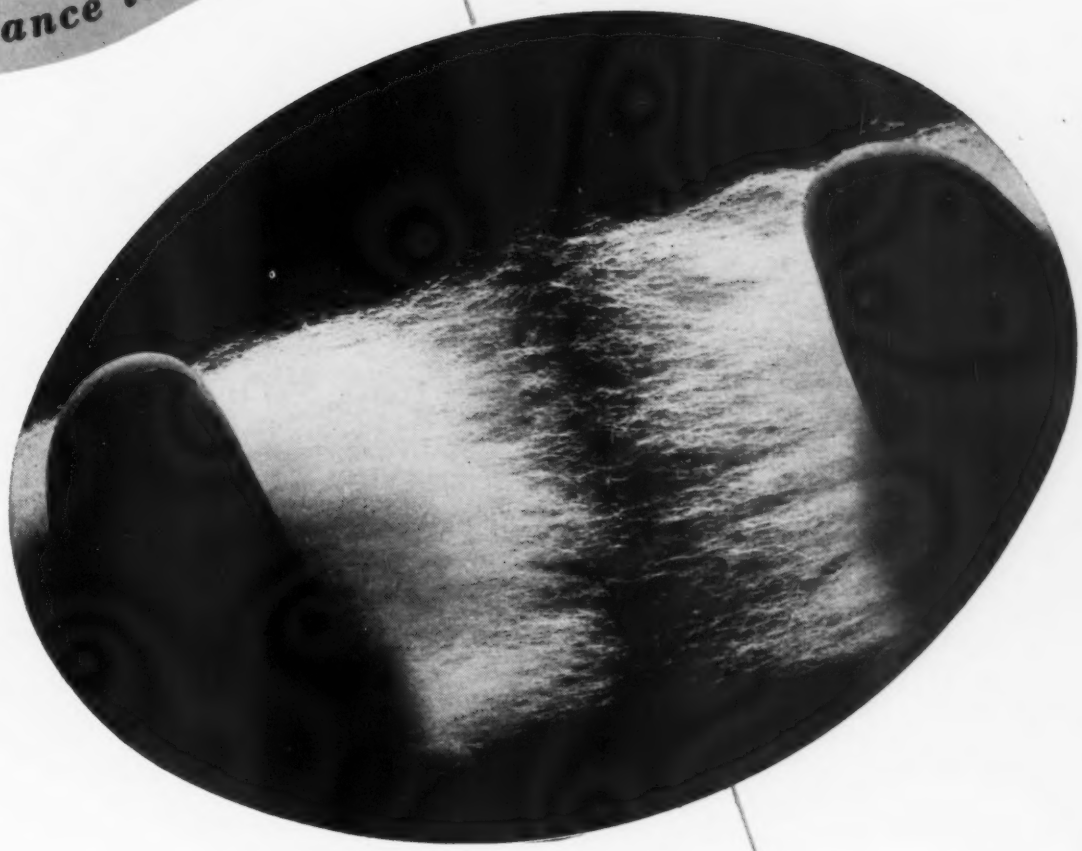
Inquiries as to our services solicited

●

ESTABLISHED 1840

for fabric stability

resistance to wrinkles



go back as far as the fiber—

* TECA

Eastman *crimped* acetate staple builds increasing demand with its two leading properties—a low moisture absorption which helps control shrinkage—a springy liveliness which combats crushing. All-TECA fabrics, and compositions where TECA is used in the higher percentages, have these qualities spun in *right from the start.*

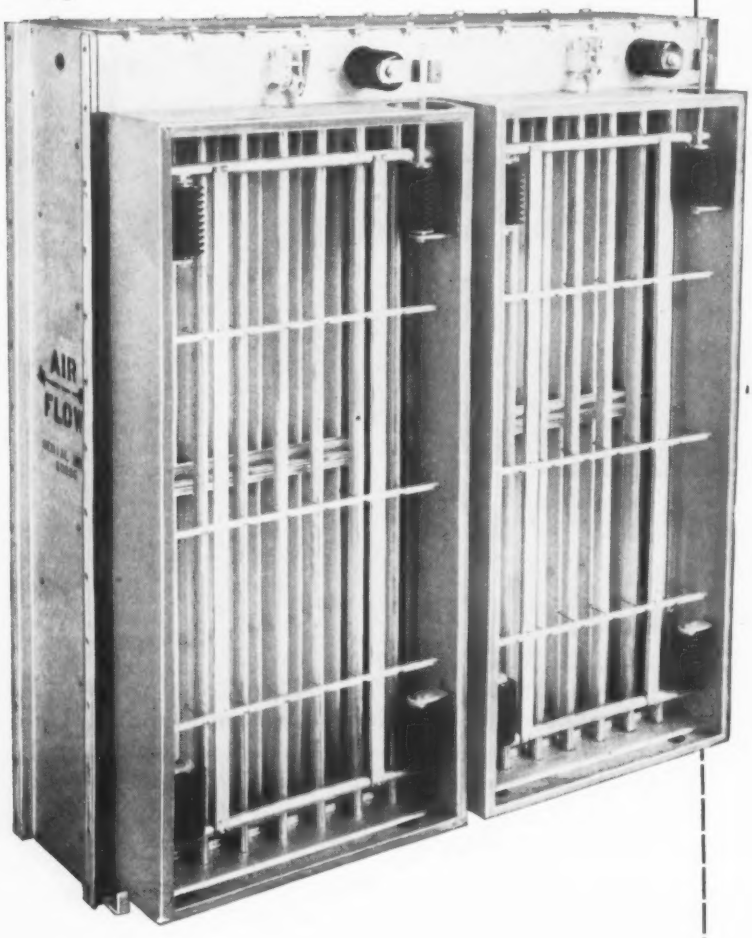
Mills consider TECA the logical fiber to improve the appearance and efficiency of new fabrics—are continually experimenting with a wider range of deniers and lengths, used alone or in combination with other fibers—on cotton, worsted, wool, and silk systems.

* EASTMAN *crimped acetate rayon*

For further information about TECA, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, sales representatives for TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

INTERESTED IN

Smoke-free air?

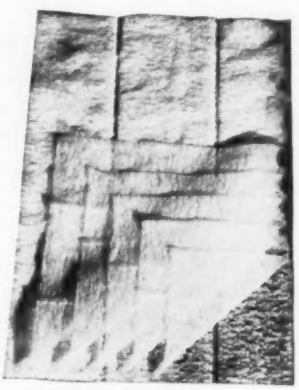


that's definitely an Electro-Airmat job!

SMOKE had air filters "buffaloed" for years. But no more—the Electro-Airmat averages 85% to 90% efficiency as compared to the 0% to 15% rating of ordinary mechanical filters for smoke removal.

That's a big difference and there's a reason. Electro-Airmat combines the best of both electronic and mechanical filtration. Airmat paper, a dry type filtering media used successfully for 20 years, serves as the collector element. Under electrostatic charge every fibre becomes a collecting electrode, attracting and holding minute smoke and dust particles which normally pass through mechanical filters.

Airmat paper simplifies maintenance, too. Its dust carrying capacity is increased 30% by electrostatic charge. When dust-loaded, you simply throw away and replace quickly with a clean sheet of Airmat. A reloaded filter is a new filter and all the fuss and muss of maintaining oil baths, removing sludge, washing and oiling collector plates is eliminated.



Airmat paper.

And you are never without protection. An Electro-Airmat can't quit on the job. If electronic action ceases due to power failure or in case of "stack effect" due to system design, Airmat paper continues to function as an efficient mechanical filter.

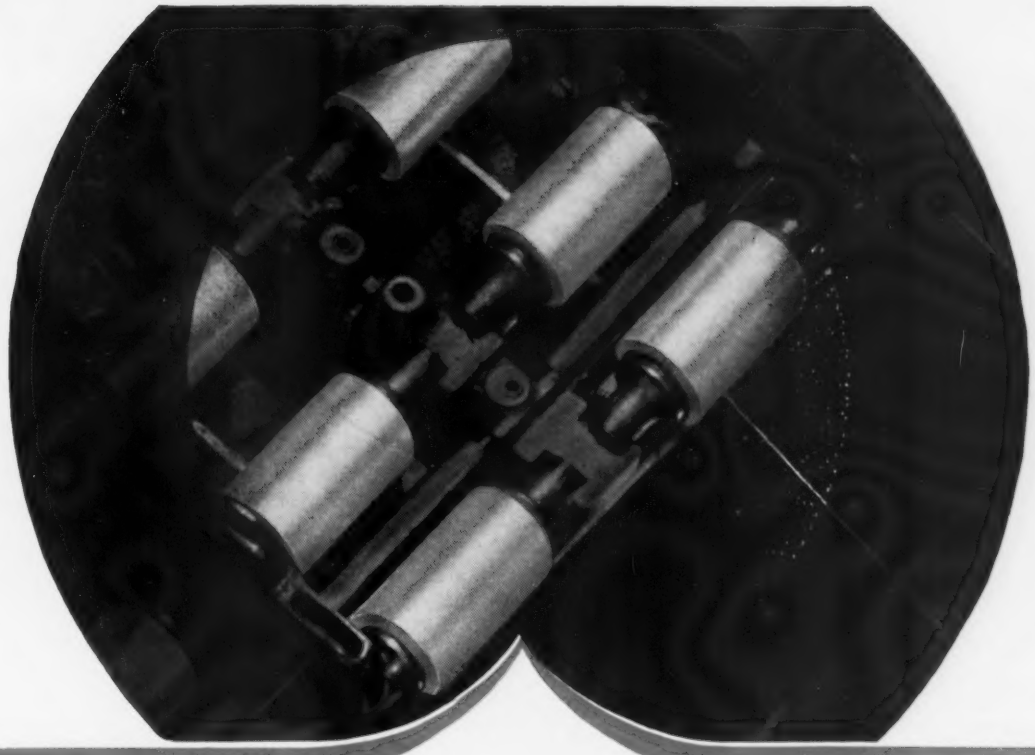
Smoke-free air? Sure you can have it plus these many other advantages with an AAF Electro-Airmat. Write for Catalog No. 253.

AMERICAN AIR FILTER COMPANY, INC.
304 Central Ave., Louisville 8, Ky.

In Canada: Darling Bros., Ltd., Montreal, P. Q.

AAF

ELECTRO·AIRMAT
ELECTRONIC PRECIPITATOR



SPECIALLY ENGINEERED *to* INCREASE YOUR PRODUCTION

IMPORTANT REASONS WHY YOU SHOULD SPECIFY DAYCOS

1. Large reduction of ends down.
2. More foreign elements removed from yarn.
3. Specially compounded for uniform wear, lengthening service life.
4. Equally effective for special types of synthetic and synthetic blends of yarn.
5. Not affected by temperature changes.
6. Oil resisting and static free.
7. No grooving—less ends down.
8. Easy to apply.

Whether your frames are equipped with flat clearers or revolving clearers, there is a specially engineered Dayco Roll Covering designed to give you greater uniformity of yarn, increased production with lowered costs.

Dayco Roll Coverings do this because they have ideal cushion, exactly the right coefficient of friction and are unaffected by humidity changes or temperature extremes throughout an exceedingly long life. Their surface is so tough that it never grooves, hollows out, flattens or distorts. Since Daycos are static free, lapping up is practically unknown.

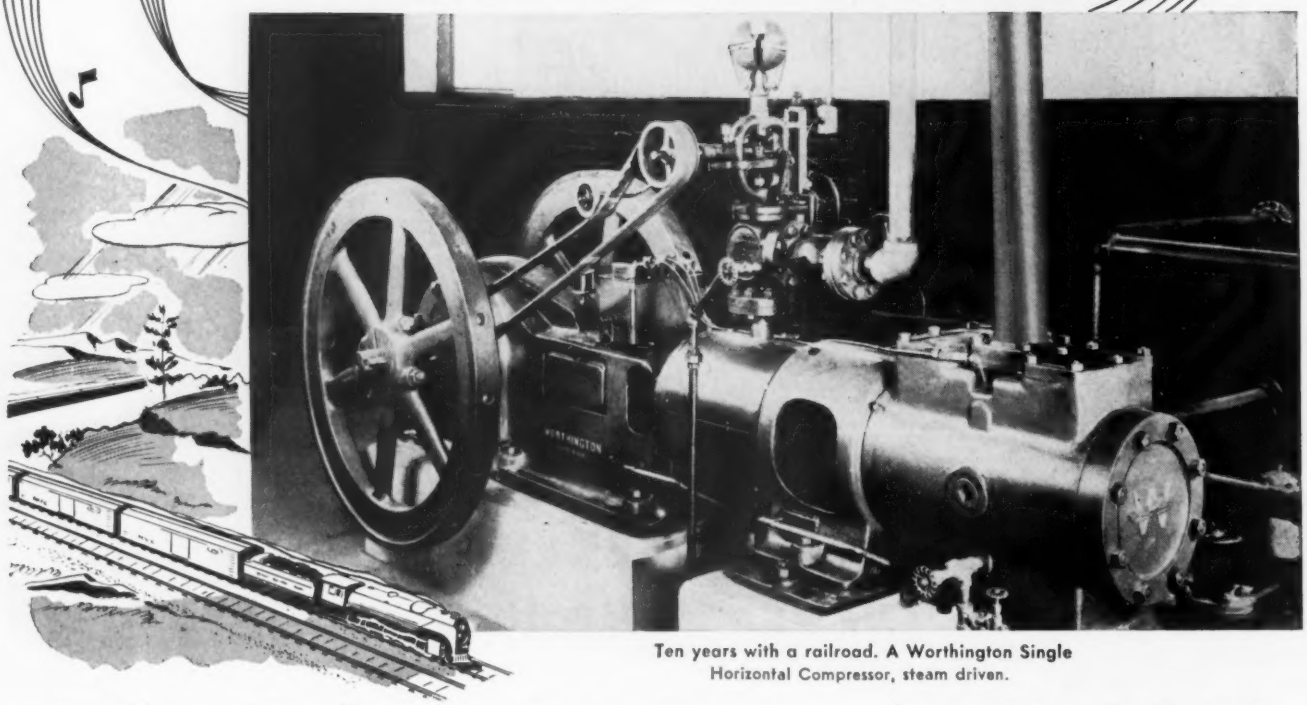
Daycos lower your costs, too, because accurate accounting records have proved that the cost-per-hour of operation with Dayco Roll Coverings is definitely less.

Check the eight advantages listed at the left which you get with Dayco Roll Coverings. Then let us demonstrate how these specially engineered cots can help you raise both your quality standards and your production curve. Write today for complete information.

TEXTILE PRODUCTS DIVISION • DAYTON RUBBER
Main Sales Office: Woodside Bldg., Greenville, S. C.
Factory: Waynesville, N. C.

Dayton Rubber
THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

"I've been workin' on the railroad all the livelong day...." FOR 10 YEARS!



Ten years with a railroad. A Worthington Single Horizontal Compressor, steam driven.

The old song might well have been written about this Worthington Single Horizontal Compressor, a veteran in railroad service. Not an "old timer", though — because at ten years of age a Worthington Compressor is *young*. Everywhere in industry you'll find Worthington single horizontals with far longer service records, going as strong as the day they were installed. That's because they're built with one idea uppermost — continuous heavy duty. Year after year, they breeze along like an athlete in top form.

Get the Whole Story

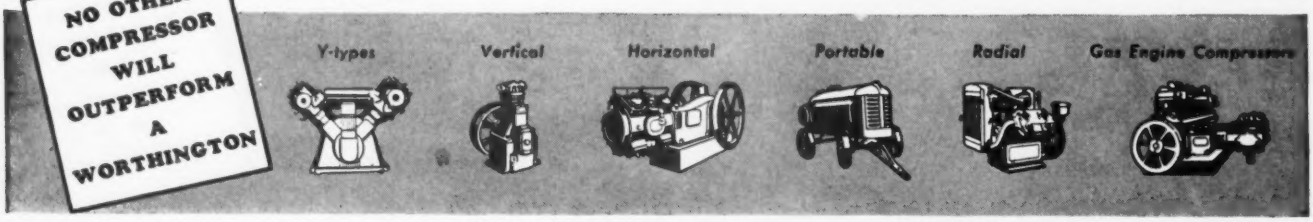
If your compressed-air requirements are between 55 to 1987 cfm, one of the 29 sizes of Worthington Single Horizontal Compressors will meet them with the lasting dependability and economy that means complete compressor-satisfaction. Made in a variety of steam or motor driven models — all with the famous Worthington Feather* Valve — the line is fully described in Bulletin L-640-B1A. Write for it. See why in compressors, as in so much other equipment, *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.*

WORTHINGTON

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON

*Reg. U. S. Pat. Off.

K7-S



NOW... Redder Shades of Black

ON ACETATE RAYON WITH

Hydroxanil "2R"*

Hydroxanil 2R has been developed in answer to popular demand for redder shades of acetate black than those produced through the use of Hydroxanil G. Hydroxanil 2R has all the superior qualities of Hydroxanil G, including, superior wash fastness, resistance to sublimation and perspiration fading.

HYDROXANIL 2R is used in the same manner as Hydroxanil G, and is ideal for producing *wash fast* developed black on acetate and rayon combination materials through the use of acetate developed black and rayon developed black in place of rayon direct black.

With Hydroxanil G and Hydroxanil S, a new member of the Hydroxanil family, a complete line of fast developed colors can be obtained on rayon, cotton and union materials.

HYDROXANIL G (formerly simply Hydroxanil), Hydroxanil 2R, and Hydroxanil S are currently available in commercial quantities and may be used to great advantage not only for their superior qualities but also to replace B.O.N. and Beta Naphthol.

MARCO PRODUCTS

Let us solve your developer problems during these days of developer shortages

*Patent applied for

MAHER COLOR & CHEMICAL CO.

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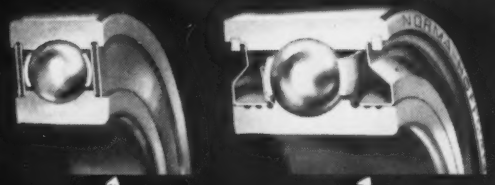
"If it isn't Wide Enough It isn't Good Enough"

...TO MEET TODAY'S PROBLEMS

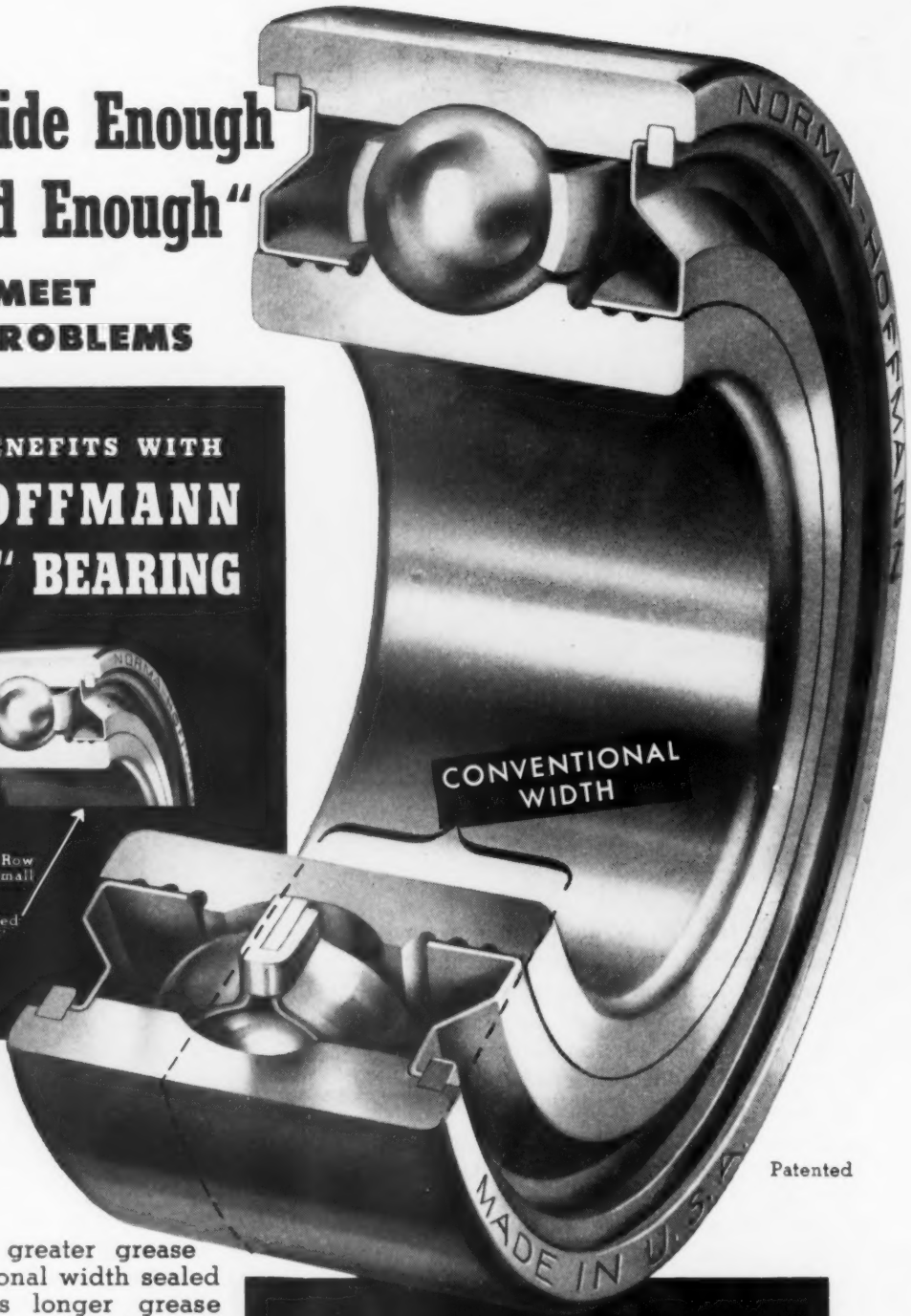
GET 3 DESIGN BENEFITS WITH

NORMA-HOFFMANN "CARTRIDGE" BEARING



CONVENTIONAL Single Row Width sealed bearing has small grease capacity.

NORMA-HOFFMANN patented double row width "Cartridge" Bearing has 100% greater grease capacity.



Patented

Here's What You Get

1. **Longer Life** A 100% greater grease capacity than conventional width sealed bearings. This means longer grease life... longer periods between relubrication—because a large volume of grease does not oxidize or dry out as readily as a thin film of grease.
2. **Greater Contact Area** 43% to 85% greater contact area between shaft and bearing bore and between housing and bearing O.D., as compared to conventional width bearing. This eliminates need for locknuts and results in greater shaft strength as it is unnecessary to cut locknut threads. Slippage and peening are also prevented.
3. **Full Load Carrying Capacity** Unlike many other sealed bearings, ***full size*** balls are used; hence, there is no reduction in load carrying capacity.

America's No. 1 SEALED BEARING by NORMA-HOFFMANN

NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONNECTICUT

FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Seattle, Phoenix

A hard problem . . . made easy!

Carry a clam shell up in the air—drop it on a rock—and there's a hard problem solved for a hungry sea-gull!

Once you have the answer—it's easy. But sometimes you can spend a lot of time and effort hunting for the solution to a new and out-of-the-ordinary problem.

In your de-sizing operations there have probably been many times when you've had difficult and unusual problems to face—the "problem lots" that can be a headache to the bleacher and dyer. Diastafor brand de-sizing agents can make your de-sizing easier by eliminating problem lots. For among the various types of Diastafor is one to suit every de-sizing condition—it's easy to find the one that will best meet a particular need.

Because Diastafor will work well in wide ranges of temperature and pH it has great flexibility of use. You can depend on it under widely varying conditions to help give you a fine finish and trouble-free operation, whether you are working with cottons, rayons or mixed goods.

We like to invite bleachers and dyers to prove to themselves the results that Diastafor gives by trying it on the hardest lots they have to dye. Ease of use, economy and fine performance have made Diastafor de-sizing agents the leaders for 39 years.

Our sales and technical staffs are always at your service. Just drop us a line if we can be of assistance or if you would like our representative to call on you. Address Standard Brands Incorporated, *Diastafor Department,* 595 Madison Ave., New York 22, New York.

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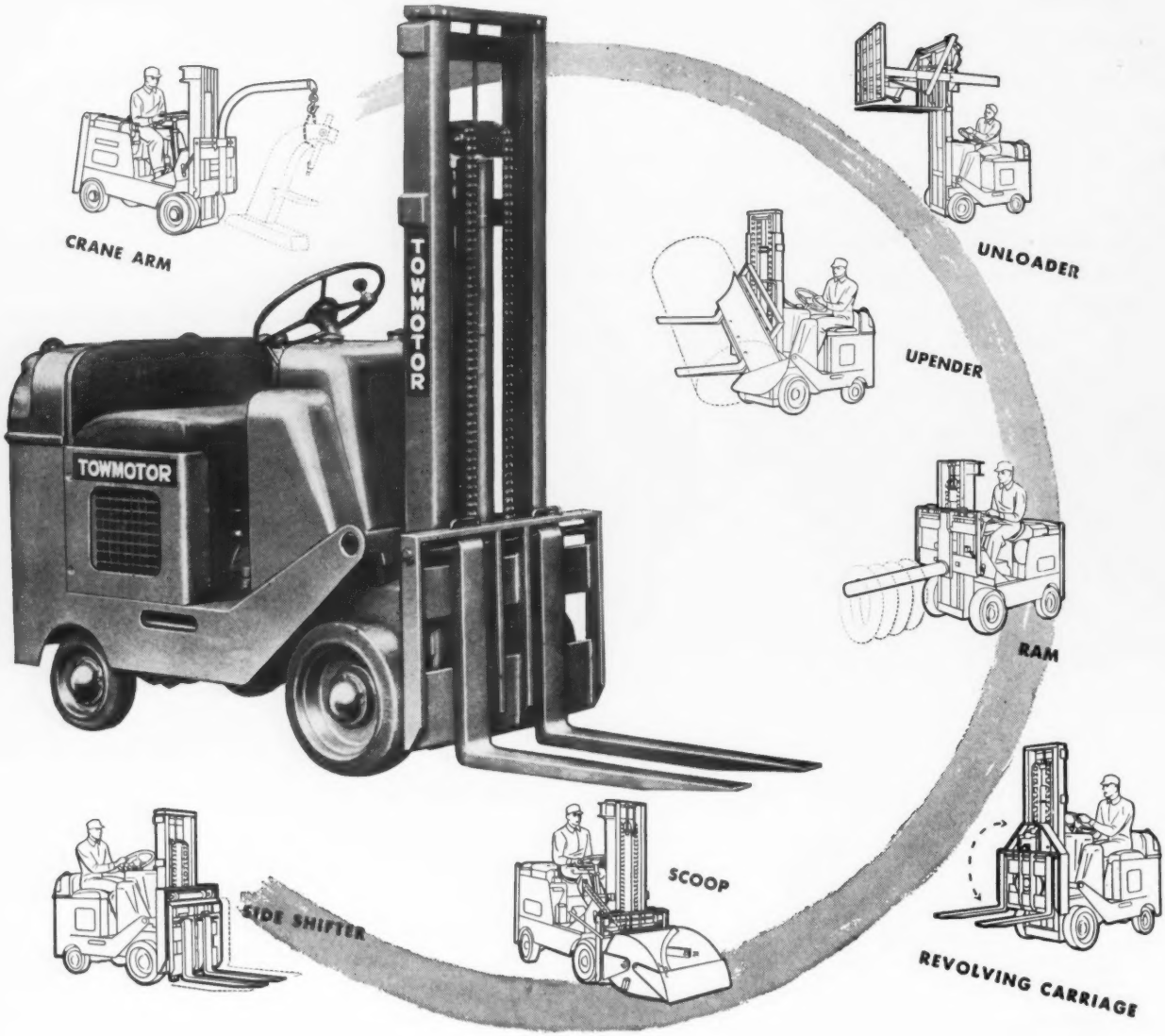
There's a TOWMOTOR FORK LIFT TRUCK and ACCESSORY for Your Job!



Towmotor Fork Lift Trucks provide efficient, safe and economical handling for all materials, regardless of type, shape or size. Now, to still further increase handling efficiency, the accessory equipped Towmotor can also be used for standard fork lift truck operations. Thus it handles the regular, as well as the unusual and difficult loads that are headaches in so many factories and warehouses. Let Towmotor solve your materials handling problems. Send for Towmotor Accessory Data Sheets today. Towmotor Corporation, Division 22, 1226 E. 152nd Street, Cleveland 10, Ohio.

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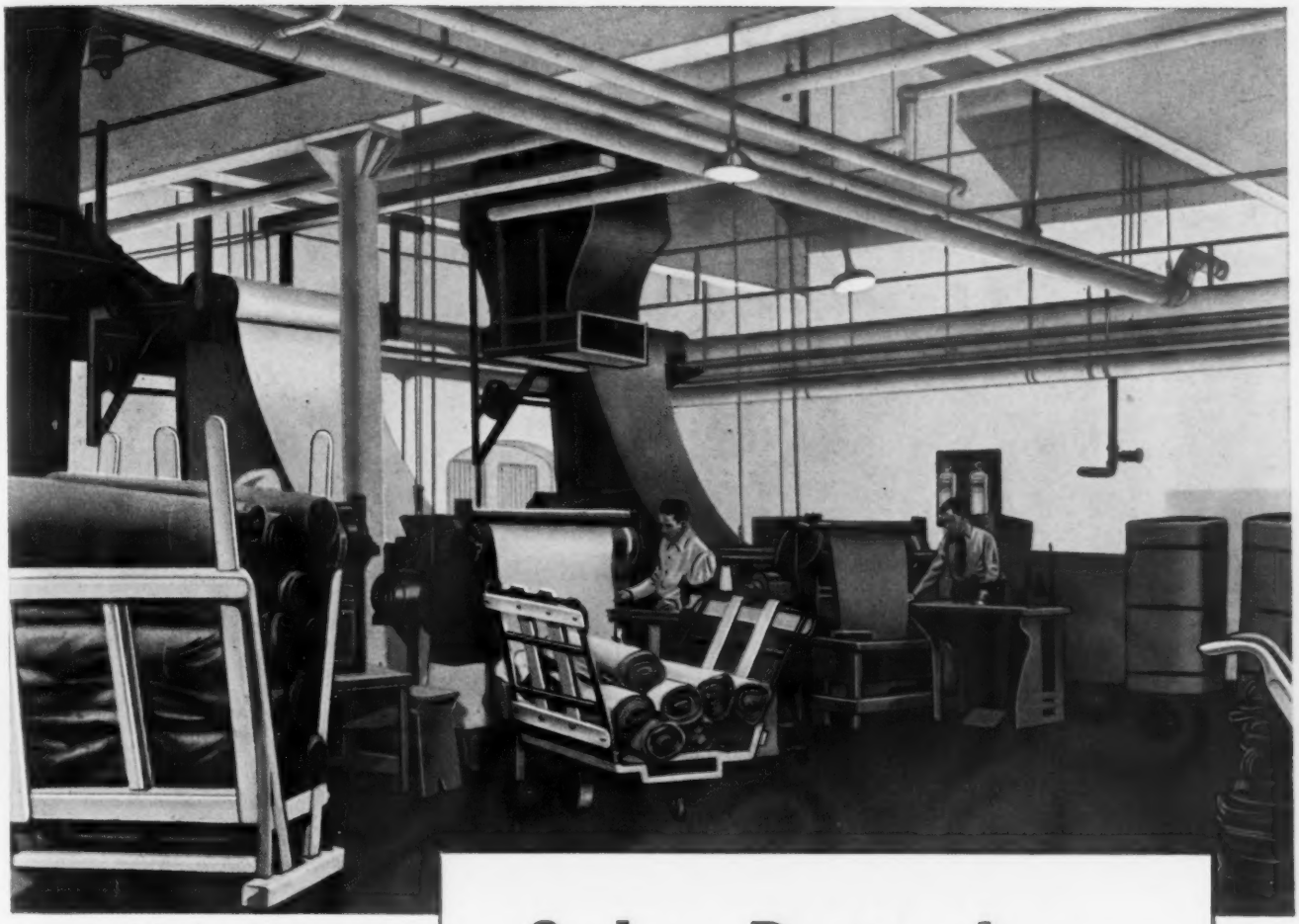
TOWMOTOR *THE ONE-MAN-GANG* **FORK LIFT TRUCKS** *and* **TRACTORS**



● *Interior of the plant of the United Piece Dye Works, Lodi, N. J., after it had been repainted according to the principles of COLOR DYNAMICS.*

Color Dynamics

lessens workers' eye fatigue, reduces absenteeism and improves efficiency in United Dye Plant!

How can color be used to focus an operator's attention on his task, relieve eye strain, and increase his efficiency? The answer is simple. When next you paint, do it according to Pittsburgh's new and scientific system of COLOR DYNAMICS.

COLOR DYNAMICS is based upon the principles of the *energy in color.* Science long has known that colors exert a strong influence on human beings. Pittsburgh has worked out a system of painting which utilizes this energy on every paintable surface—machines, floors, walls, ceilings and mobile equipment.

By using the right colors, workers' eye fatigue is lessened, absenteeism is reduced, accident hazards are lessened, morale is improved and production is maintained at high standards for quality and volume.

In almost all instances where Pittsburgh's COLOR DYNAMICS has been applied more work per man-hour and more man-hours per worker have usually resulted.

You'll find the entire story of COLOR DYNAMICS and how to use it fully explained in a new book on this subject. Write for a *free* copy—today. Pittsburgh Plate Glass Company, Paint Div., Dept. TW-117, Pittsburgh 22, Pennsylvania.

Paint RIGHT with Color Dynamics
Paint BEST with Pittsburgh Paints!

The benefits of COLOR DYNAMICS are made more enduring when you use Pittsburgh's long-lasting, high-quality paints. There's a Pittsburgh Paint for every industrial need.

WALLHIDE—available in four types: **FLAT**—a velvet-like finish that is beautiful and restful; **SEMI-GLOSS**—with higher sheen; **GLOSS**—with enamel-like sheen; **PBX**—extra-durable finish can be washed frequently without streaking or spotting. These paints are enriched with Pittsburgh's exclusive *"Vitolized Oils"* which keep film *live,* tough, elastic.

LAVAX PBX ENAMEL—for woodwork, furniture or metal trim. Brushes out to a smooth, satin finish that resists marring and abrasion.

FLORHIDE—for floor surfaces, quick-drying, tough, can be scrubbed frequently with soap solutions.

LAVAX MACHINERY ENAMEL—a durable finish impervious to oil, grease, grime or dirt.

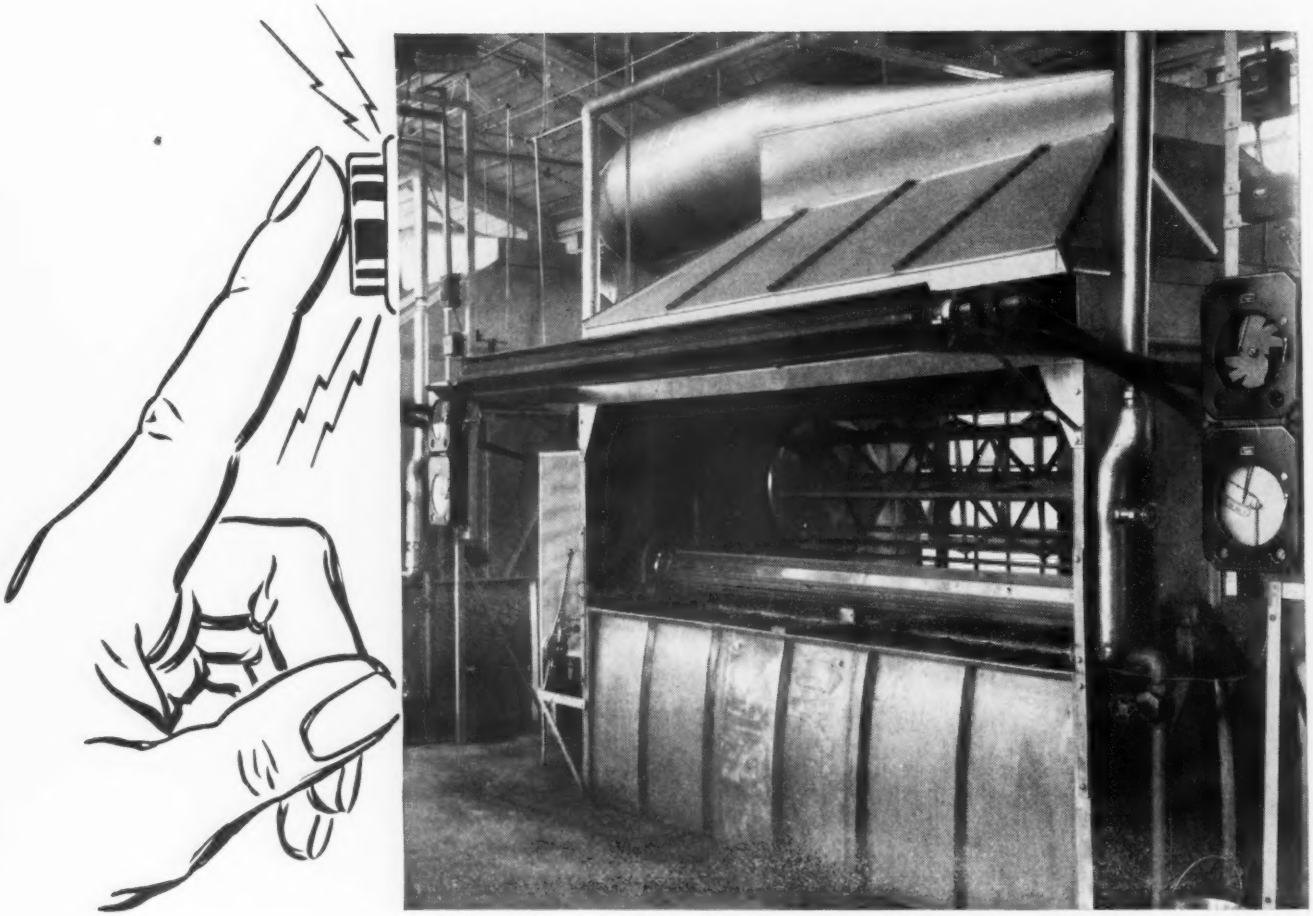
PPG

PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

You'll make no mistake when you press this button!



PRESS the starter button—and watch that panel of Taylor Fulscope Time Schedule Temperature Controllers take over! They're making a battery of Rodney-Hunt wool piece dyeing machines deliver top quality every single time for Marshall Field's Fieldcrest Division at Spray, N. C. And mistakes can't happen because they do the job *automatically!*

Here's what happens at the press of the button. The Fulscope Time Schedule Controllers let steam into the dye kettles and control the rate of rise to the predetermined temperature. Then they maintain that temperature precisely during the hold period until the end-of-cycle signal flashes. For an add period, the operator just presses the button again. When the shade is matched, he presses the return-to-start button, shutting off the steam and returning the cam to start position. He can change the timing with the same cam merely by speeding up or slowing down the cam movement.

Taylor Time Schedule Controllers not only cut operating costs by saving you money on steam and dyestuffs but also assure uniform dyeing conditions. This is only one of many ways you can keep quality up and costs down with Taylor Accuracy. Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.

• • •

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

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IN HOME AND INDUSTRY

HEYDEN chemicals serve the nation's industries

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FORMIC ACID
FOR

TEXTILES	LEATHER
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After-treatment of sulfur colors	Swelling and soaking
Wool treatment in mothproofing	Disinfection
Acid wash after dyeing or resin treatment	Mold-prevention
	Chrome and vegetable tans

SODIUM FORMATE
FOR

TEXTILES	LEATHER
Mordant in dyeing or printing	Chrome tanning for "full" and "round" feel
Humectant	

FORMALDEHYDE, SOLUTION U.S.P.
FOR

TEXTILES	LEATHER
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Crease- and crush-proofing	Combined tanning
Textile resins	Vegetable tanning
Splash-proofing	Disinfecting
Absorbency control	

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SODIUM FORMATE: 300-lb. fiber drums.

FORMALDEHYDE, SOLUTION U.S.P.: 72,000-lb. tank cars; 18,000- and 36,000-lb. tank trucks (in New York metropolitan area only); 475-lb. drums (returnable and nonreturnable); 45-, 90-, 125-, 225-lb. kegs; 100-lb. carboys.

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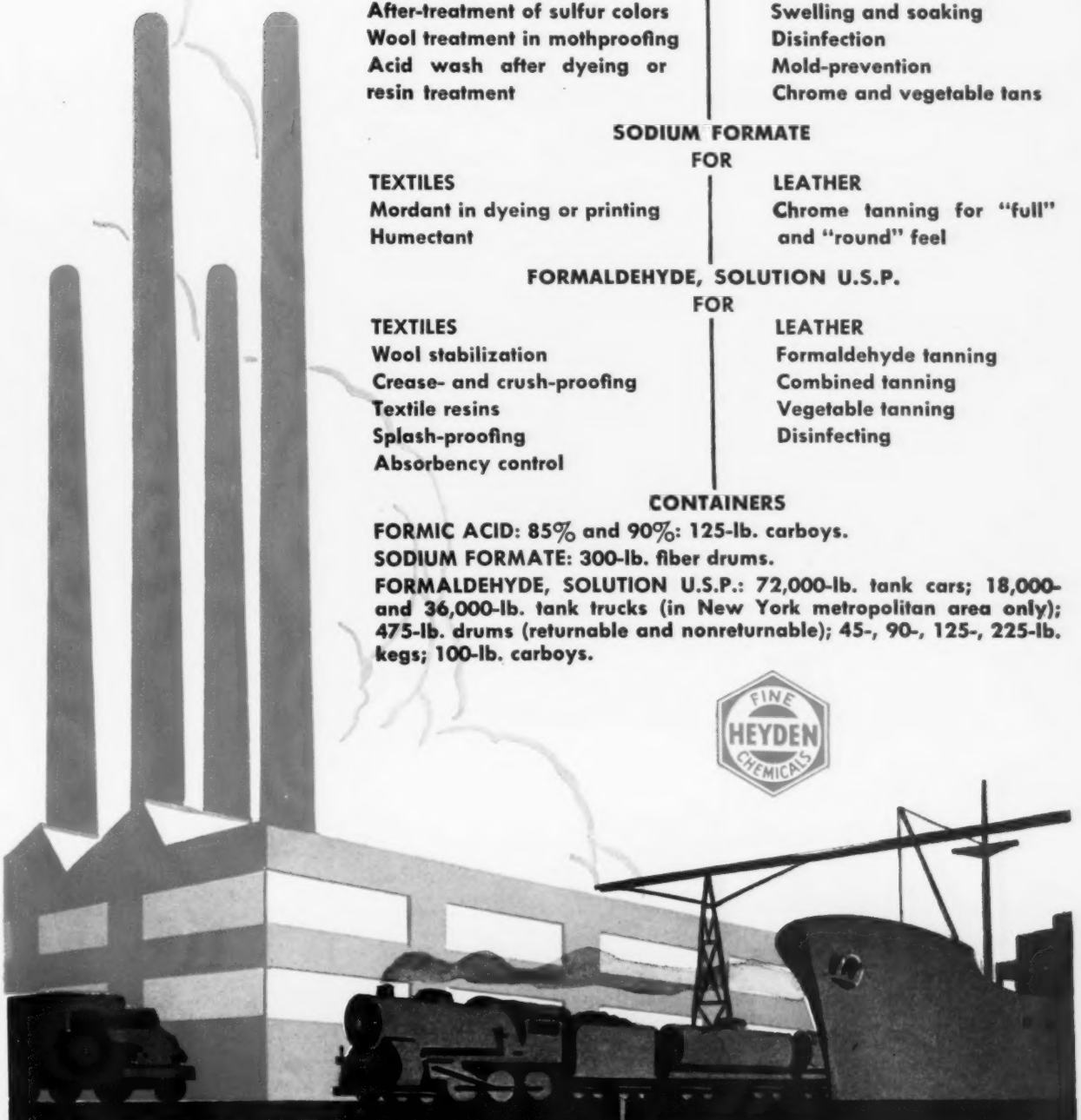

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For complete piping needs see the complete CRANE line

Process piping . . . power plant . . . heating system. Whatever your needs in piping equipment, you can fill them from the complete Crane line. One order covers everything—valves, fittings, pipe, accessories, including shop-fabricated piping assemblies. One order gives you dependable quality in every single item.

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ONE SOURCE OF SUPPLY offers the world's most complete selection of steel, iron, brass, and alloy piping materials for all applications.

ONE RESPONSIBILITY for piping materials helps you to get the best installation and to avoid needless delays on jobs.

OUTSTANDING QUALITY in every item assures uniformly dependable performance from every part of piping systems.

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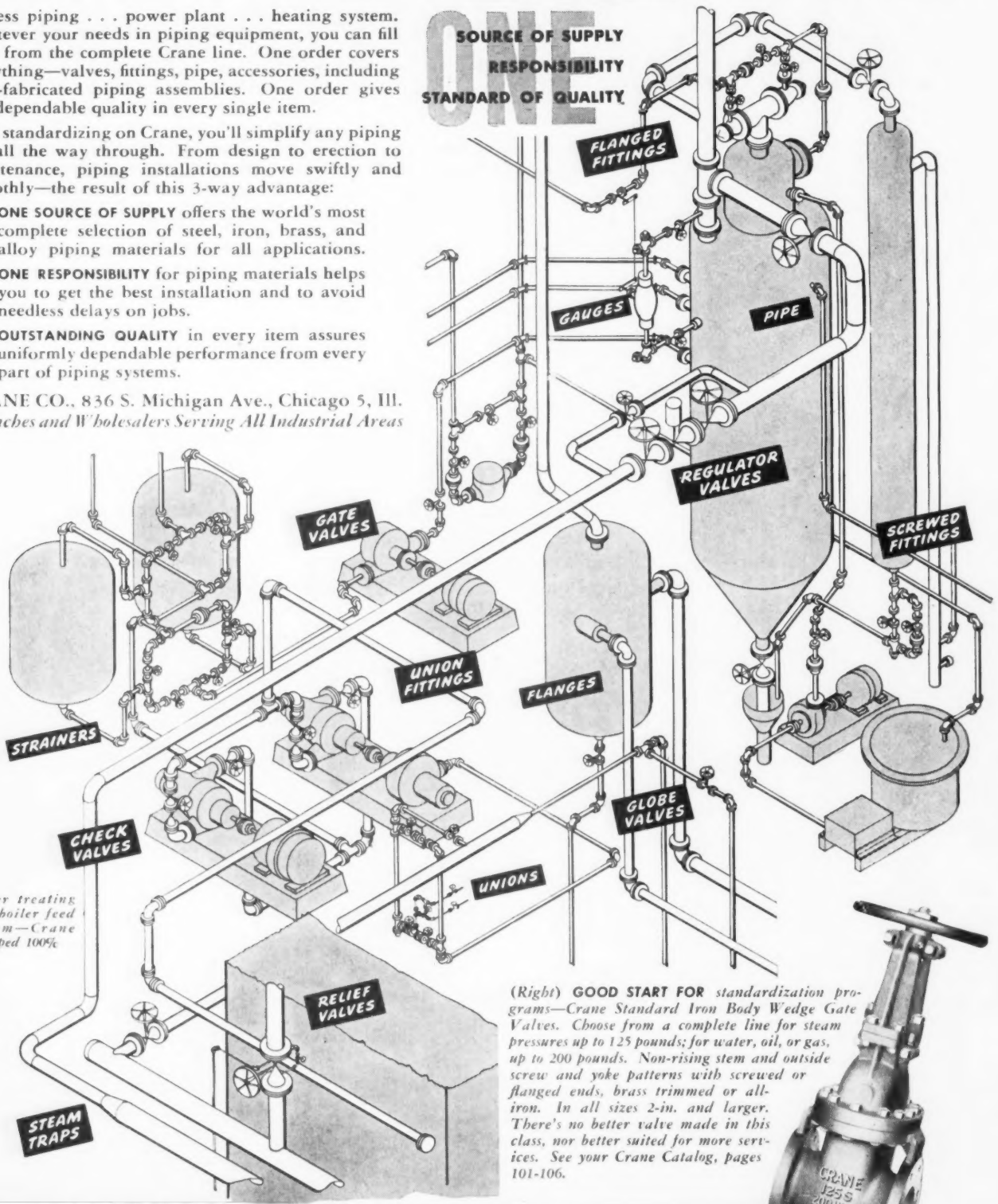

Water treating and boiler feed system—Crane equipped 100%

(*Right*) **GOOD START FOR** *standardization programs—Crane Standard Iron Body Wedge Gate Valves. Choose from a complete line for steam pressures up to 125 pounds; for water, oil, or gas, up to 200 pounds. Non-rising stem and outside screw and yoke patterns with screwed or flanged ends, brass trimmed or all-iron. In all sizes 2-in. and larger. There's no better valve made in this class, nor better suited for more services. See your Crane Catalog, pages 101-106.*

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VALVES • FITTINGS
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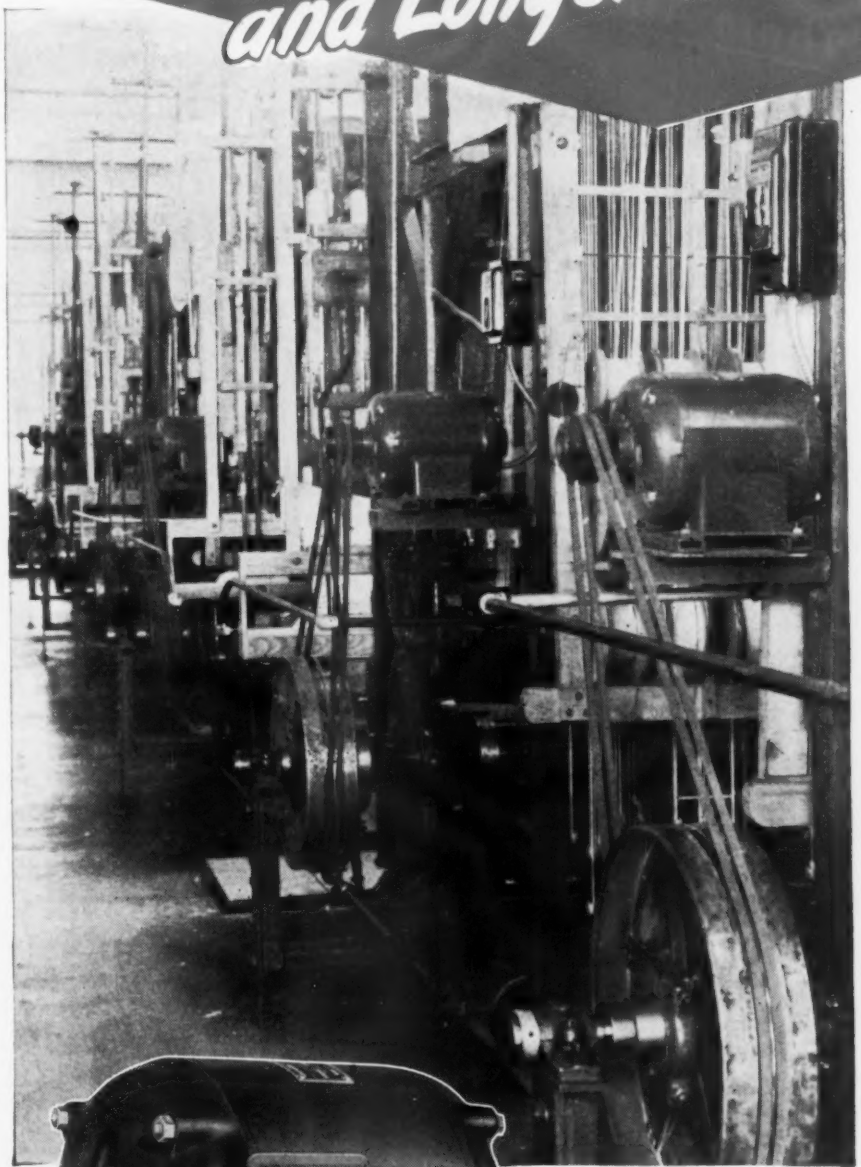
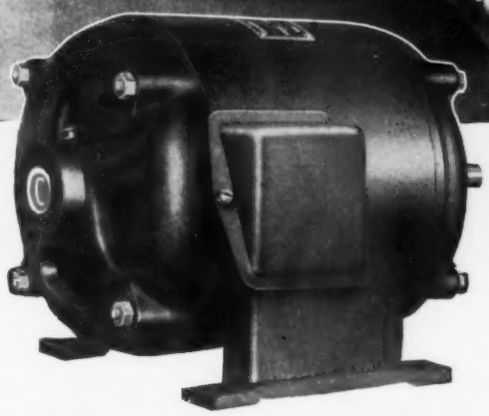
The Right CENTURY Motor — Correctly Protected — *Means Better Performance and Longer Motor Life*





7 Century 1 horsepower general purpose three phase ball bearing motors driving narrow fabric looms.

Century builds a wide range of electric motors, both integral and fractional, to meet the requirements of industrial production and commercial needs. The wide variety of electrical characteristics may be in open, splash proof, totally enclosed fan cooled or explosion proof frames — for multispeed or single speed operation.

Many of these motors are ideally suited for such applications as pumps, conveyors, agitators, washers, dryers, etc. The right Century motors to meet the load requirements — plus the right motor frame to protect the vital parts from surrounding hazards is a combination that will give you top performance.

Specify Century Motors for all your electric power requirements

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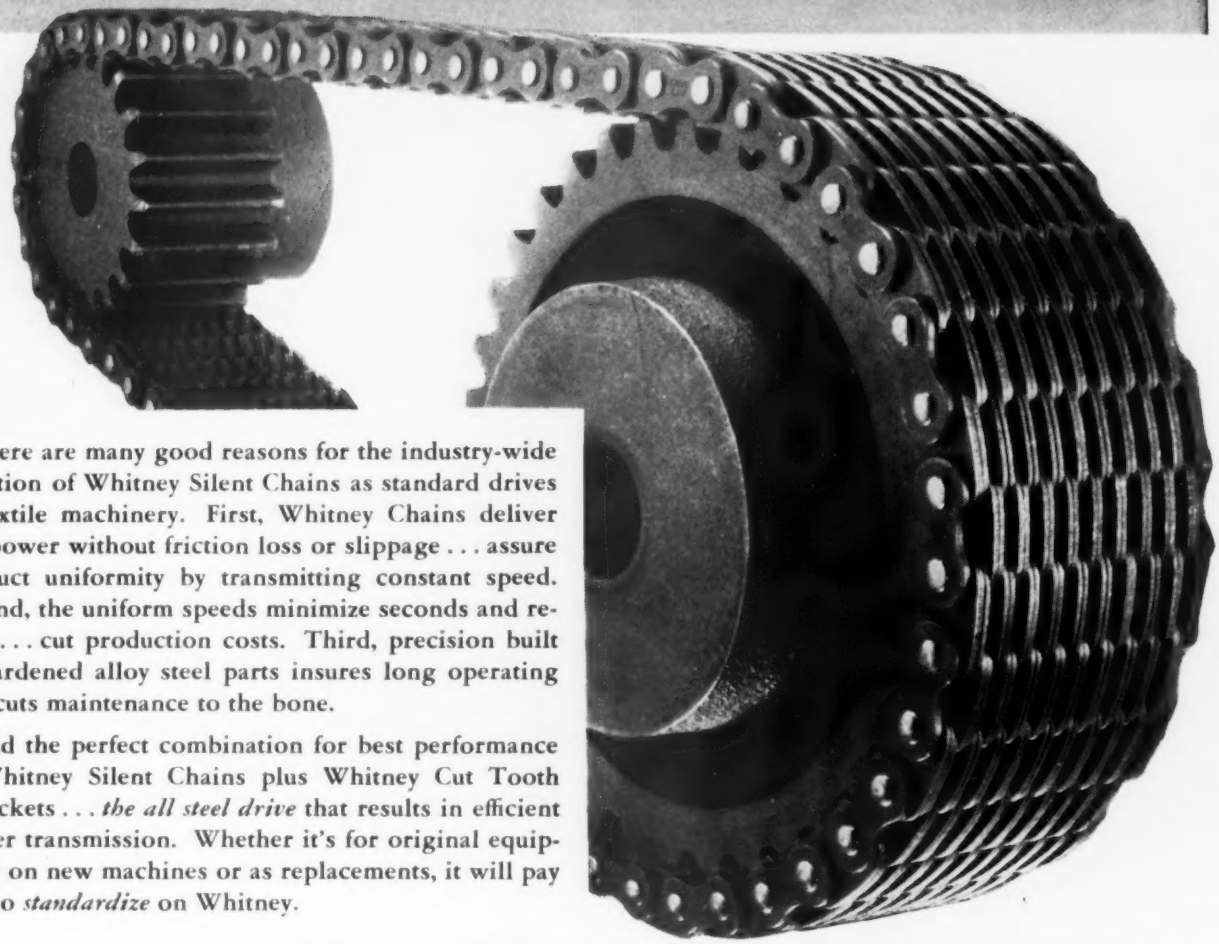
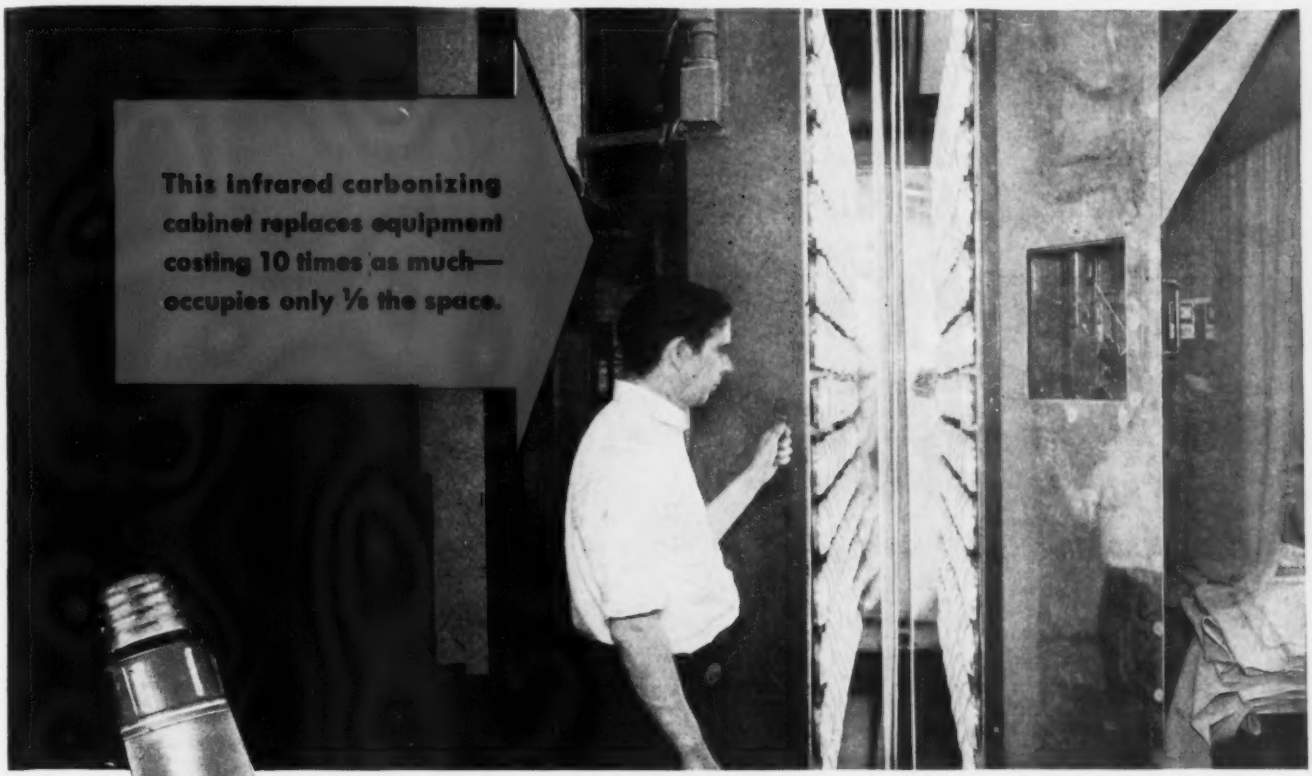


There are many good reasons for the industry-wide selection of Whitney Silent Chains as standard drives in textile machinery. First, Whitney Chains deliver full power without friction loss or slippage . . . assure product uniformity by transmitting constant speed. Second, the uniform speeds minimize seconds and rejects . . . cut production costs. Third, precision built of hardened alloy steel parts insures long operating life, cuts maintenance to the bone.

And the perfect combination for best performance is Whitney Silent Chains plus Whitney Cut Tooth Sprockets . . . *the all steel drive* that results in efficient power transmission. Whether it's for original equipment on new machines or as replacements, it will pay you to *standardize* on Whitney.

The Whitney Chain & Mfg. Company
HARTFORD 2, CONNECTICUT

WESTINGHOUSE INFRARED HEATING CUTS COSTS IN TEXTILE PROCESSING



You Can Do Many Drying and Heating Jobs In Your Plant Faster, Easier and Cheaper with Westinghouse Infrared Lamps

Whether your primary interest is in cutting costs or speeding production, it will pay you to get the facts on infrared processing. In addition to wool carbonizing, slasher drying, curing resins, fixing printed fabrics, drying after all sorts of wet processing—many new uses are continually being found for this modern, more efficient, faster heat. To explore the opportunities in your plant for cutting costs and speeding production with Westinghouse industrial infrared lamps, write for further information to Westinghouse Electric Corporation, Lamp Division, Bloomfield, N. J.

SEND FOR THIS BOOKLET
FREE!

Here are the facts. The many advantages of radiant heat, the types of lamps used, typical installations and detailed information on the most efficient type of installation for specific heating processes.

Westinghouse Lamps

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Please send me your free illustrated booklet—"Industrial Infrared Lamps", Form A-3817.

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NEW BOOK

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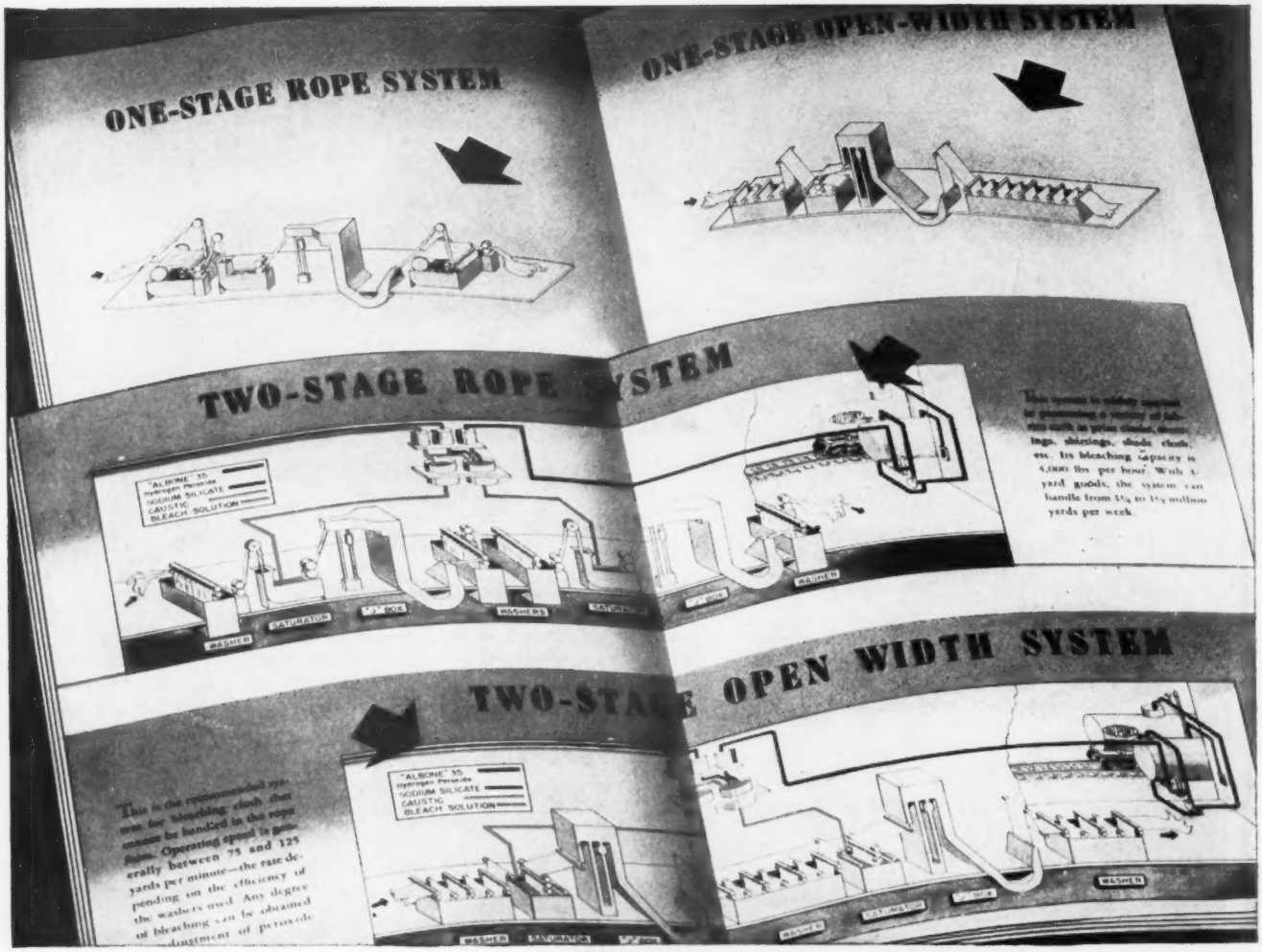
For Better, Faster Bleaching of Cotton Piece Goods at Lower Over-all Costs

Now is the time to improve your bleachery so that it will return the most in the way of fast production of quality goods at low cost. You can do it with one of the cost-saving, production-boosting Du Pont Continuous Bleaching Systems which can be specifically designed to meet your production requirements. Typical layouts and other information are given in this new book, copies of which can be obtained by writing or mailing the coupon below to E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.



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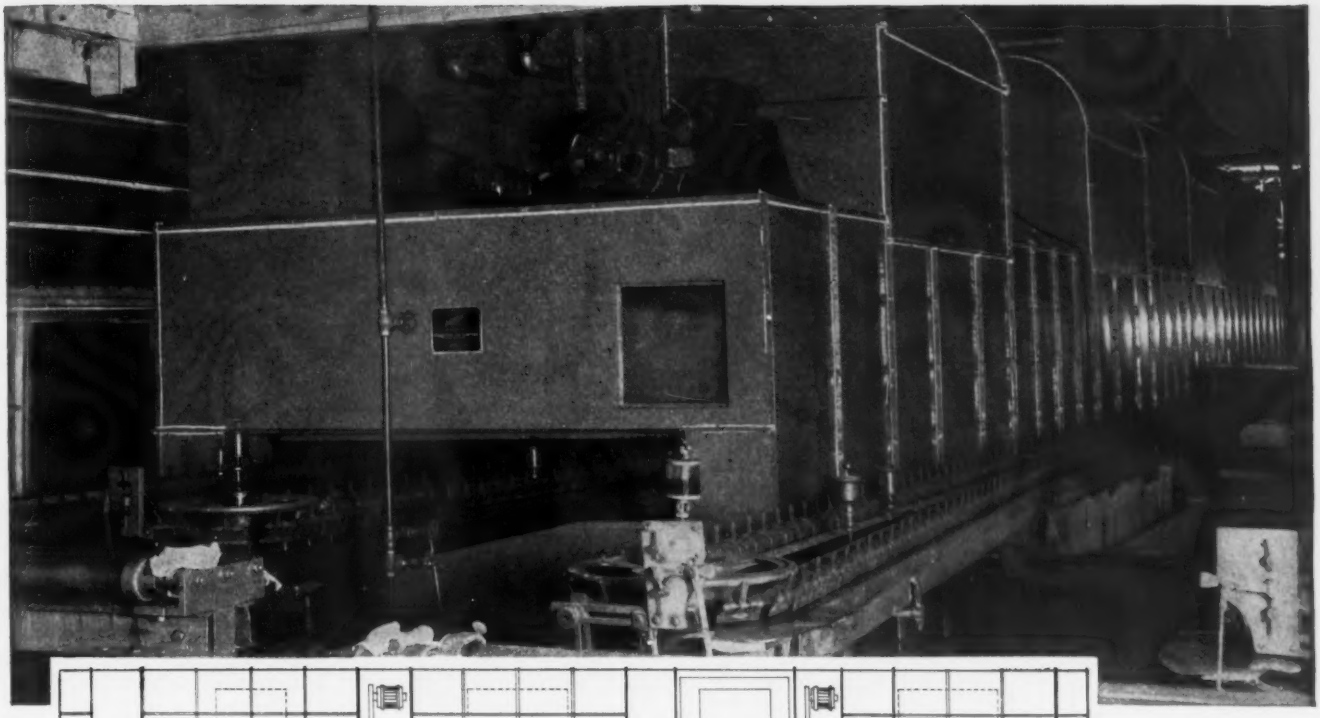

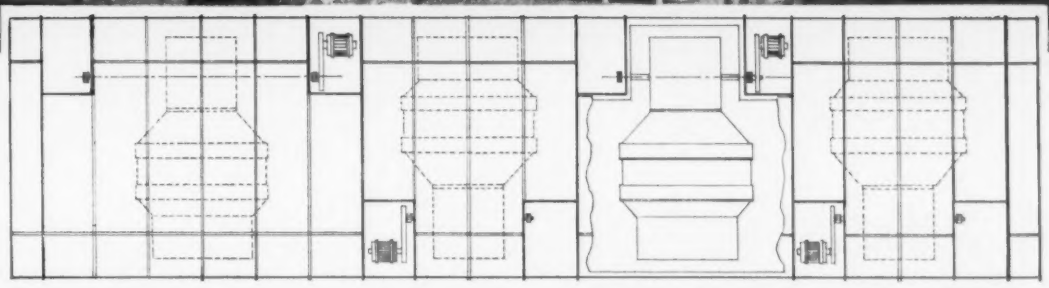

Installation of 80-foot ***Industaire Tenter Frame*** *Dryer; with plan view of 4 typical self-contained units.*

CONTROLLED AIR FLOW IN THE INDUSTAIRE TENTER FRAME DRYER

Gives Faster, Lower Cost Drying Of Cotton and Rayon Textiles

THERE is new efficiency in air flow and distribution in the Multiple Unit Tenter Frame Dryer by Industaire that speeds up textile drying and saves you money.

By Industaire's scientific system of air distribution, hot air is impinged at uniformly high velocity upon both upper and lower surfaces of the cloth at an angle counter to the direction of cloth travel. This method guarantees efficient, high speed drying of cloth and selvage. Industaire drying units are conveniently fabricated in completely self-contained ten and fifteen foot sections, giving any desired drying length, above ten feet, in multiples of five feet.

Find out how Industaire can speed drying and cut costs in your plant. Without obligation, send for Data Unit #2.

Send for free Data Unit #2

INDUSTRIAL AIR COMPANY

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Other Industaire Products: Exhaust Systems, Humidifying and Air Conditioning Systems, Expert Blower System Engineering, Package Dryers, Rayon Cake Dryers.

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Cold Facts...

...ON LUBRICANT PERFORMANCE

This special refrigerating apparatus at Sinclair Laboratories tells an important story every day to research experts and refinery control technicians.

The thermometers, shown above inserted in lubricating oil samples, record temperature as cold is increased in the special refrigerating apparatus. Trained observers check the samples frequently, test for pour point. Sinclair, thus, makes sure that its lubricants retain full protective qualities even at sub-zero temperatures . . . when your specific application demands.

Such constant manufacturing control and research assures you that famous Sinclair lubricants . . . and all new Sinclair products . . . will give outstanding performance to meet your most exacting requirements.

Sinclair Textile Oils

LILY WHITE OILS

In grades to suit all spindle speeds, loads and operating conditions

Light color, long life

SINCLAIR REFINING COMPANY • 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SINCLAIR

Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

Men took the grass for granted

Look at the broken land—bare, denuded, baked dry by the sun, powdered by the wind, gutted by the wild rain. Look at the four-room flimsy ranch houses two feet deep in sand.

Erosion of the soil, whether by wind or water, results not from sickness of the soil, but from mistreatment of the vegetation which holds the soil in place.

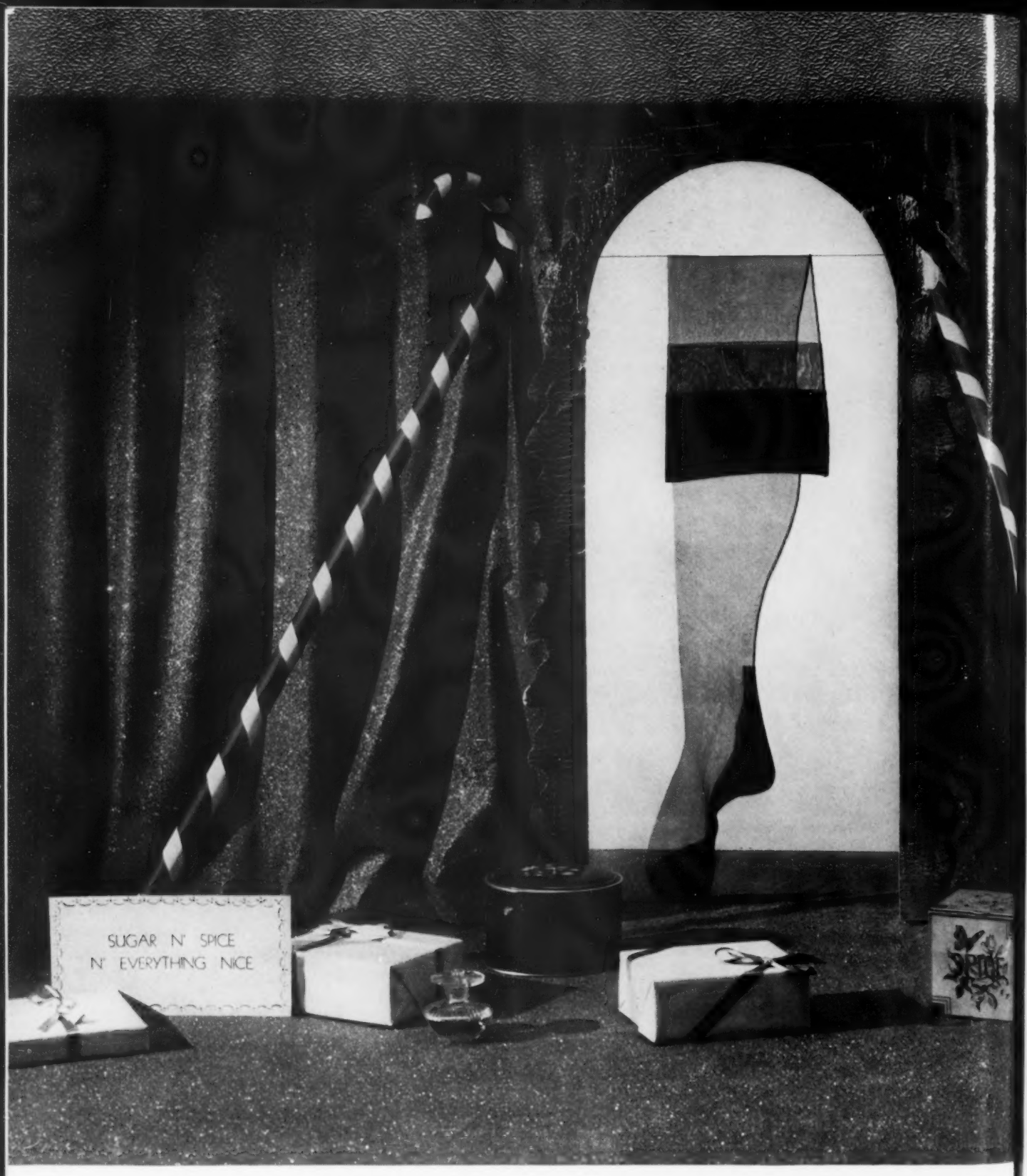
Men grew careless on the great plains. It wasn't conceivable that the grass could ever completely disappear.

Without planned resistance to drought, wind and water—without controlled grazing, safe plowing and wise planting—even the finest land will die.

Take a look at your last Financial Statement: Are you carrying the money that you charge off for Depreciation as a *"current"* or as a *"fixed"* (plant) asset? . . . Is it money in the bank or is it money that you owe to yourself?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* ba-is for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS
READING, PENNA.



Sugar 'n Spice 'n Everything Nice . . . It takes the clear, sheer beauty of flawlessly-knit full-fashioned stockings to please the "little girls" of today. To assure these finer qualities in full-fashioned knitting, hosiery manufacturers depend on TMW "Fixture Drawn"* Needles. This special TMW patented process holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

* Reg. U. S. Pat. Off.

TEXTILE MACHINE WORKS • READING, PA.

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Safety!

Is it safe? There can be only one answer to that question when it concerns a processing agent. Even efficiency must get second consideration. If it isn't safe, it isn't efficient.

One of the qualities of Olate most highly valued by textile processors is its safety—to every fiber and fabric.

Olate is a pure, neutral, low titer textile soap, made from oils selected and refined with unusual care. Because it is highly resistant to oxidation and rancidity . . . because its fluid solutions penetrate fibers quickly and evenly and rinse out rapidly and thoroughly . . . Olate gives maximum protection against fabric discoloration and odor difficulties in finished goods.

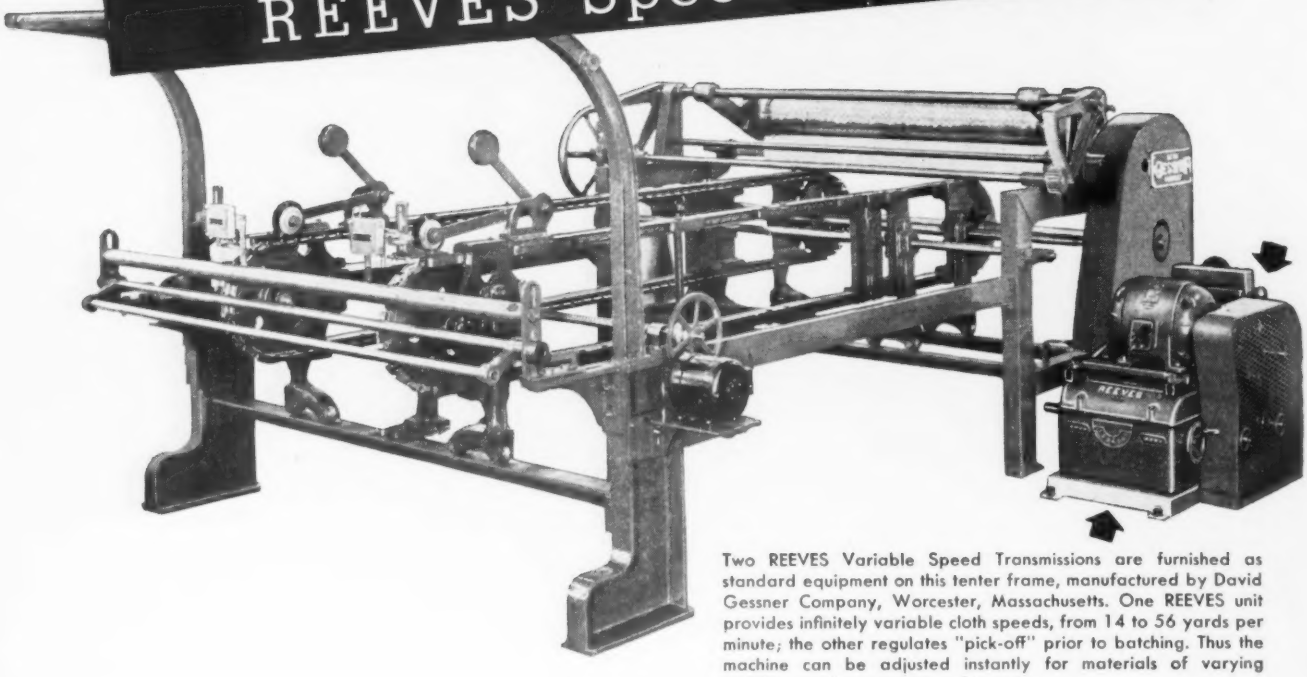
From every standpoint—safety, efficiency, economy and saleable finished goods—you can't buy a better soap than Olate. Try it.

PROCTER & GAMBLE

Olate

safe and efficient for every textile soap usage!

Increase earning capacity of your machines with REEVES Speed Control



Two REEVES Variable Speed Transmissions are furnished as standard equipment on this tenter frame, manufactured by David Gessner Company, Worcester, Massachusetts. One REEVES unit provides infinitely variable cloth speeds, from 14 to 56 yards per minute; the other regulates "pick-off" prior to batching. Thus the machine can be adjusted instantly for materials of varying weights, moisture content and texture.

● There's one *proved* way of ironing out the "peaks and valleys" in your production . . . and keeping your machines operating at full capacity around the clock. That proved—and *ap*proved—way is to install REEVES Speed Control wherever an operation is affected by varying temperature, humidity or operator's skill . . . or where yarns and cloth of varying weight, texture or moisture content are to be processed.

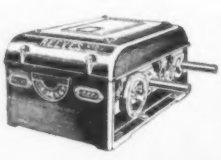
For, on countless textile processing jobs . . . on beamers, slashers, warpers, dry cans, mangles, dryers, nappers, range finishers and many other machines . . . REEVES Variable Speed Drives accurately and instantly provide the right speed for every phase of every operation—without time-consuming slowdowns. As a result, products come off the line in a smooth, continuous flow . . . both quantity and quality are improved . . . manufacturing costs are reduced.

Included in the complete REEVES Speed Control line are three basic units, each of which is offered in a wide range of sizes, designs and speed ratios—with manual, hydraulic, mechanical or electric remote controls. An experienced REEVES field engineer with long experience in mill operations similar to your own will be pleased to help you select the REEVES unit best suited for your needs. Ask him to consult with you soon. Meanwhile, write for the 114-page catalog W450A describing the complete line of REEVES Speed Control units.

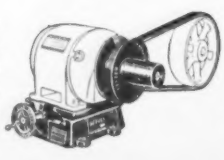
REEVES PULLEY COMPANY • COLUMBUS, INDIANA

THE THREE BASIC REEVES SPEED CONTROL UNITS

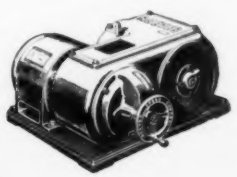
VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.



VARI-SPEED MOTOR PULLEY provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 15 hp.



MOTODRIVE combines motor, speed varying mechanism and reduction gears in single compact unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 15 hp.



Accurate Variable

REEVES Speed Control

Gives the Right Speed for Every Job!

better RESEARCH through complete facilities

Product Development Laboratory: Where new Textile Starches are developed and present products improved to meet the changing requirements of the Textile Industry.

Research Library: An example of the complete facilities provided for our staff of expert chemists and technicians.

Textile Testing Laboratory: Gives warp yarns rigid tests to insure proper weavability and weight.

Textile Laboratory: At your service for analysis, comparison and recommendation for your sizing needs.

An over-all view of the Research Laboratories located on two floors in the Administration Building of the A. E. Staley Manufacturing Company at Decatur, Illinois. The Control Laboratories are located in a separate building on the plant grounds.

•

Nothing has been overlooked to make the Staley Laboratories complete in every detail that will enable us to develop and produce the very finest Textile Starches. The services of these modern, up-to-date laboratories—and our staff of chemists and technicians—are available to our customers.

Out of such research has come—and will continue to come—our complete line of Textile Starches which make it possible for you to select the proper Staley Starch for every sizing requirement . . . Textile Starches that assure consistent, high quality and dependable performance because they are under strict Control Laboratory supervision throughout the entire processing. Now is the time to get acquainted with our prompt service and complete cooperation. Write, wire or phone for more detailed information.

STALEY STARCHES

A. E. STALEY MFG. COMPANY

Staley's CORN AND SOY BEAN PRODUCTS

ATLANTA • SPARTANBURG
DALLAS • PHILADELPHIA
CHICAGO • NEW YORK
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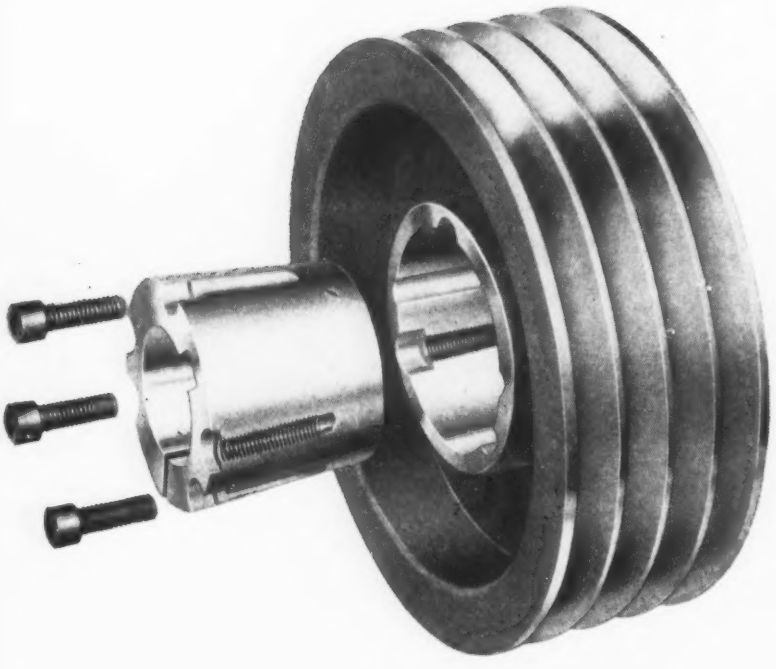
TAPER-LOCK BRAND



THE NEW TIME-SAVING TAPER BORE SHEAVE

TAPER-LOCK has the simplest, surest mechanism ever devised for holding wheels to shafts...TAPER-LOCK saves time. You slip it on the shaft, line it up and tighten while sighting...TAPER-LOCK runs true. It holds with a firmness equivalent to a shrunk-on fit, yet it disengages with less effort than any other sheave.

TAPER-LOCK sheaves are available in all the most wanted sizes. Thus Dodge has not only created a great new product in the power transmission field, but has made this product adaptable to needs throughout industry.

TAPER-LOCK is a striking example of the new Dodge products which help you put more power on the job — cut costs and increase production. The savings which Dodge equipment make possible will be important to you in the competitive days ahead. Get the full story — now.

DODGE MANUFACTURING CORPORATION
MISHAWAKA • INDIANA

IN ALL THESE STOCK SIZES:

CLASS SHEAVE	PITCH DIAMETER	NUMBER GROOVES	TOTAL SIZES
DUAL DUTY "A"	3.0 to 18.0	1 to 6	150
DUAL DUTY "B"	4.6 to 18.4	1 to 6	114
B	5.4 to 38.0 20.0 to 38.0	7 to 10 2 to 10	76 36
C	9.0 to 44.0	3 to 10	128
D	13.0 to 33.0	4 to 10	77

DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER

He's a factory-trained specialist qualified to analyze your mechanical power transmission needs and recommend correct equipment. Consult him without obligation. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

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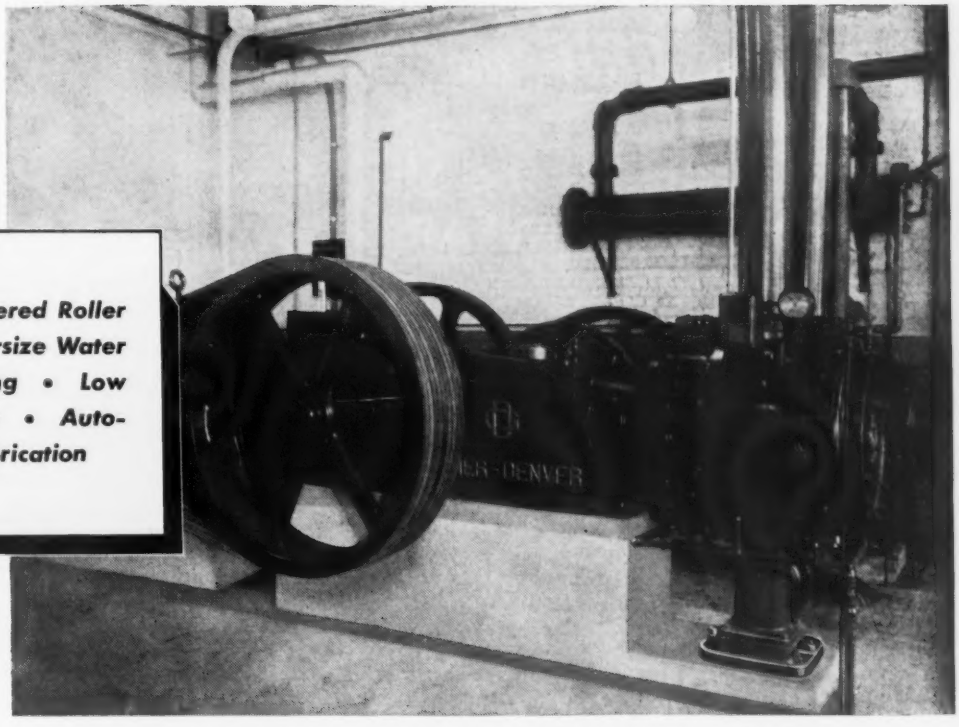
NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

Double Row Timken Tapered Roller Main Bearings • Oversize Water Jackets for Efficient Cooling • Low Lift, Air Cushioned Valves • Automatic and Reliable Lubrication



Gardner-Denver RX, single-cylinder horizontal, double-acting, single-stage compressor—available in capacities from 89 to 1292 cubic feet displacement per minute.

No wonder it will run Continuously

Every part of a Gardner-Denver "RX" Air Compressor is built for heavy-duty, full-load, continuous service. And with such service goes high volumetric and mechanical efficiency—unusually low power costs! Here are additional features which make the RX a favorite in so many industries:

★ *Duo-plate cushioned valves—simple, durable, unusually quiet.*

★ *Large and unrestricted port areas help reduce heat of compression; insure effective lubrication with minimum oil consumption.*

★ *Suction valve unloaders on all inlet valves result in lowest power consumption during unloaded period.*

★ *Oil-tight, dust-tight construction.*

For complete information about Gardner-Denver RX Compressors, write Gardner-Denver Company, Quincy, Illinois

USE COMPRESSED AIR FOR SAFETY CONVENIENCE FLEXIBILITY

GARDNER-DENVER

SINCE 1859

Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

The SIDES of a V-BELT are what GRIP the PULLEY

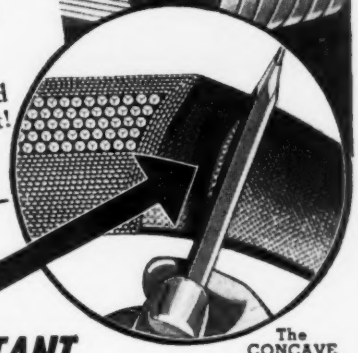
-Naturally, it's the SIDES that GET the WEAR

Diagram of V-Belt in Sheave-Groove

The story of what wears out a V-Belt—and how a belt can be built to withstand this wear a longer time — is quickly told. Here are the facts:—

Only the sides of a V-Belt touch the pulley. The sides do all the gripping on the pulley. The sides pick up the load. They transmit that load to the belt as a whole. Then, once again, the sides grip the driven pulley and deliver the power to it. And the sides take all the wear against the sheave-groove wall.

This explains why everyone who works around machines has always noticed that the *sidewall* of the *ordinary* V-belt is the part that wears out first!



The CONCAVE SIDE is a GATES PATENT

That's Why the *Patented* CONCAVE SIDE That *REDUCES* Wear on Sidewalls is So *IMPORTANT*

Naturally, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt.

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belt can possibly give.

The Concave Side is MORE Important NOW Than Ever Before!

Now that Gates *SPECIALIZED* Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—up to 40% *higher horsepower ratings* in some cases—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important NOW than ever before!

Gates

THE MARK OF SPECIALIZED RESEARCH

Straight Sided V-Belt

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley.

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

4711

THE GATES RUBBER COMPANY, DENVER, U. S. A.

"World's Largest Maker of V-Belts"

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

Enduring Precision

This spindle bearing is standard equipment on large spindles designed by a world-famous builder of precision grinders. For extreme accuracy, for freedom from vibration, and for enduring precision, only sleeve bearings will do. Where other types of bearing retain their accuracy only for months, Bunting Spindle Bearings endure for years. Where other complex types require a surgical standard of cleanliness and a watchmaker's skill for replacement, the Bunting Sleeve Bearing requires only common-sense and the services of a good mechanic.

The secret of this performance and long life lies in the film type of lubrication. A properly designed and well lubricated sleeve bearing need not acknowledge any superior. No other bearing type possesses its simplicity, its ruggedness, its ability to deliver accurate work for many years. These attributes are possessed by the sleeve bearing.

Bunting engineers are at your service whether your problem is a precision grinder spindle, an aircraft engine, an automobile engine, or something of more or of less exacting requirements. Bunting engineers utilize their extensive experience with bearings of all types in their work of designing Bunting Cast Bronze Sleeve Bearings. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in Principal Cities.

Bunting

BRONZE BEARINGS

PRECISION BRONZE BARS

BUSHINGS

76

UNION SPECIAL

THE *Right* MACHINE FOR THE JOB!

JOB requirements vary — that's why Union Special builds a wide variety of specially designed sewing equipment. It's also the reason why Union Special field representatives make a careful study of requirements before giving you detailed recommendations on the kind of equipment to install. *If it's "Union Special", it's right for the job!*

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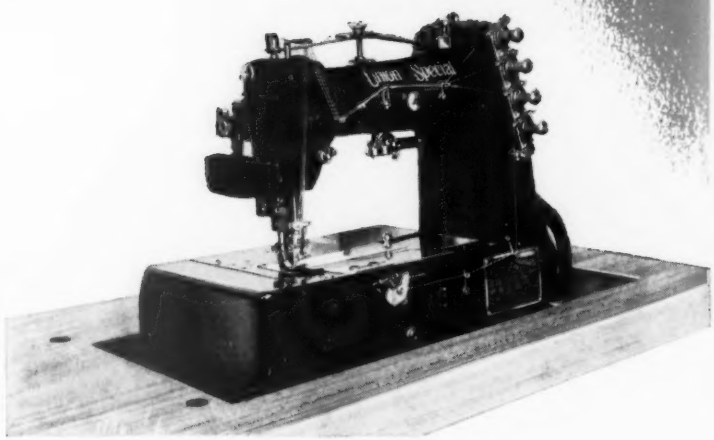


CLASS 52800. Produced in a wide choice of special styles for attaching split tube borders, cuffs, collarettes, and similar operations.

INDUSTRIAL SEWING MACHINES

TAFT-HARTLEY ACT

Frees "Slave" Labor

THE TAFT-HARTLEY ACT is two months old. Its full meaning is yet to be determined by decisions of the National Labor Relations Board and the courts. However, on its face, the Act refutes the attacks made upon it by union leaders as hysterical and fanciful.

Management has had every provocation to reply to these attacks in kind. To the credit of the employers of this country, they have not succumbed to that temptation. They have maintained a temperate attitude toward the new law and the problems it is designed to correct. This approach is right. But it is only an approach.

Union leaders will want to settle for nothing short of *repeal.* Their attack on the Act has made some headway. It may be more effective as time goes on. *Certainly the Taft-Hartley law will be repealed if management just sits tight and lets union leaders continue to confuse their followers.*

Management, therefore, must implement its present temperate attitude with a program of positive action. The Taft-Hartley Act must be made to work not because management wants it, but because it is fair to labor—and management can do things right now to see that the Act works. Management can:

I. Utilize every means at its disposal to acquaint the rank and file of union workers with the truth about the Taft-Hartley Act.

II. Suggest amendments to the Act if experience indicates that amendments are necessary.

III. Use the law as little as possible in settling labor disputes.

IV. Stand firm in its refusal to bargain away the rights accorded by the Act to workers, management, and the public.

An examination of those four *must's* will show why they provide management with its best program of action.

I.

Union members do not know what the Taft-Hartley Act provides.

There is abundant proof of that statement.

While Congress was still trying to write a law that the President would not veto, FACTORY magazine asked workers how they felt about major proposals in the pending House and Senate bills. Overwhelmingly they felt good. They were in favor of almost every individual provision that was finally incorporated into the bill and passed over the President's veto.

The same story emerged from the national opinion poll made by the Opinion Research Corporation of Princeton, N. J. and published by Look magazine after the law was enacted. It showed that union members uniformly favored major provisions of the Act, but were strongly opposed to the Act itself.

This inconsistency is easily explained. Instead of telling their members what the Act does for them, most union leaders have been condemning it as "a slave labor law" because it curtails the leaders' power and recognizes the rights of the union member and the public.

It is not a slave labor law. All of the basic rights accorded to labor by the Wagner Act of 1935 are preserved by the Taft-Hartley law. All of the unfair labor practices that were forbidden by the Wagner Act are still forbidden by the Taft-Hartley Act.

Nothing in the law impairs labor's right to bargain through representatives of its own choosing.

The Wagner Act condemned as an unfair labor practice any effort by employers to coerce employees in the selection of their bargaining representatives. So does the new law.

The Taft-Hartley Act merely recognizes rights of individual employees, of management, and of the public that were ignored by the Wagner Act.

For example, while the Taft-Hartley Act continues the workers' protection from coercion by employers, it also gives them new protection against coercion by unions. The individual worker is freed from the necessity of joining a union to *get* a job. He may still be required to join a union to *keep* his job, but not unless a majority of the workers vote for such a requirement in a government-supervised election.

Some people think the Taft-Hartley Act is weak in protecting the rights of the individual worker. They think that membership in a union should never be made a condition for holding a job. This is true. However, the Act does restore to the individual worker some rights which were blotted out under the Wagner Act, just as it does to management and the public.

A fair examination of the new law's provisions will show that they spring from one dominating purpose: i.e., to re-establish equality before the law.

For example, under the Wagner Act union leaders were free to say whatever they pleased about the employer to his employees. The employer, on the other hand, was denied freedom of speech in talking to his own employees. Now freedom of speech is largely restored.

Under the Wagner Act the employer was compelled to bargain with a certified union. Now the union must bargain, too.

Under the Wagner Act, unions alone had the right to petition for an election to determine whether the petitioning union represented a majority of the workers. Now the employer also has the right to secure an election.

These are features of the new Labor law that management must help workers understand. They must understand why the Act is not the "diabolical monstrosity" Philip Murray tells them it is.

Some companies have already started to explain these things to their workers. Techniques are well established, and they are techniques that any company can use. They include labor law digests in language workers can understand, supervisory conferences to cover points in the Act that affects the supervisor's handling of his job, distribution of reprinted articles that point out how employees benefit from the new law, editorials in plant newspapers and magazines, and advertisements in local newspapers.

II.

Management should take the lead whenever amendments to the Taft-Hartley law become necessary.

For twelve years labor leaders wilfully opposed every attempt to correct obvious abuses in the Wagner Act. We have now proved that a labor law *can* be amended. Let us be sure that management does not resort to the same obstructionist tactics labor has always used.

In carrying out its basic purpose to re-establish equality before the law, the Taft-Hartley Act makes it "unlawful... for any corporation whatever or any labor organization to make a contribution or expenditure in connection with" national elections. Corporations have long been so restrained. The novelty is the balancing restraint upon unions, which now have huge financial resources amounting to very many millions of dollars. However, the language of the Act *may* restrain the labor press from saying what it thinks about candidates, thus impinging upon the freedom of the press. Senator Taft has recognized this possibility.

If it should develop that the Act inadvertently throttles freedom of the press—or misfires otherwise—management should take the lead in securing suitable amendments to the Act. By assuming a completely stiff-necked attitude toward any and all changes in the Wagner Act, no matter how badly needed, the dominant labor leaders and their political outriders finally brought on the sweeping revisions provided by the Taft-Hartley Act. Management must not follow that example of stupid leadership.

III.

Management will be wise if it uses the new law gently in settling labor disputes.

So far employers show no disposition to use the law excessively. That is good. An analysis of the NLRB's docket from August 22 to September 30 shows that approximately 90 percent of the cases now before the Board were filed by unions and employees—not by employers.

We have been surveying employers, asking if they will have occasion to use their right to sue their unions. The answer so far is consistently, "*no.*" That answer frequently is accompanied by this remark, "We certainly hope not. We have no desire to conduct our labor relations in the courthouse."

The desired result should be for the Act to produce only those law suits that are matters of vital principle. As many employers have remarked, the courthouse remains the worst possible place to conduct labor relations. The best place is in the plant—by free collective bargaining between parties enjoying an equality before the law. The Taft-Hartley law will serve its most constructive role if it encourages this kind of collective bargaining.

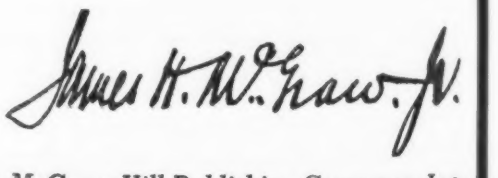
IV.

Employers should not bargain away legal rights accorded to them by the Taft-Hartley Act.

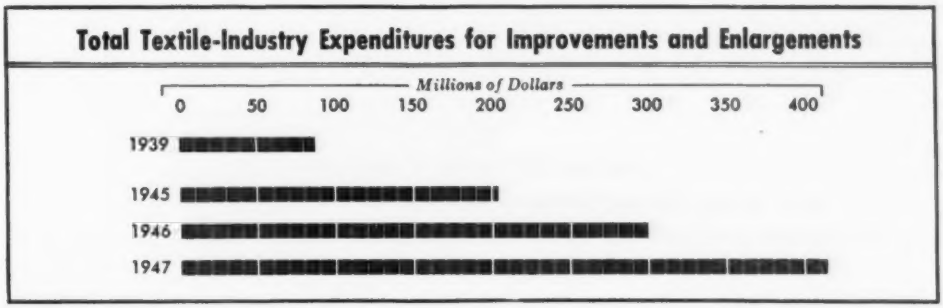
By bargaining away rights given them in that Act, employers serve only to upset a carefully created balance of equality before the law which is an essential element of fair collective bargaining.

Also, by bargaining away rights properly accorded to them, they let down those members of Congress who, in voting for the Act, braved continuous threats of political assassination by powerful union leaders. For their statesmanship in the complicated field covered by the Taft-Hartley Act these Congressmen deserve the support and gratitude of the whole nation—of management, of labor, and of the public alike.

Fairly handled on all sides, the corrective force of the Act can be made a major bulwark of industrial freedom.



President, McGraw-Hill Publishing Company, Inc.



Textile Industry's EXPENDITURES Top $400,000,000 in 1947

Highlights: Rising costs of machinery and construction sharply reflected in sums textile mills are spending on modernization—Rise in year is 35% in dollars but only 16% in units—Numerous firms spend $1,000,000 or more—Turn of tide in expenditures is not yet in sight.

By WILLIAM B. DALL, *Managing Editor, TEXTILE WORLD*

THE RISING TIDE of textile mill expenditures, which started with the last war year, has continued in 1947. TEXTILE WORLD's estimate, based on reports from individual mills as reported monthly in the "News About Mills" department, sets the 1947 expenditure at the immense figure of $414,589,000. The figure for 1946, similarly calculated, was $298,500,000, and for 1945 $212,000,000.

The outlay reflected in these sums covers the industry's commitments for renovation, modernization, and expansion; and, of course, involves cost of buildings, machinery, service and engineering equipment, etc. The figures include all branches of the industry. Modification is made of synthetic-fiber-plant expenditures; and, since so much of this equipment and process is chemical in nature, we have included only 20% of their total expenditures.

The $414,589,000 expended in 1947 includes a proportionate extension to the end of this year of the figures already available for nine months. In detail, the projects covered include not only construction of new mills, additions to present plants, remodeling and renovation of existing mills, and purchase of new equipment whether for increased capacity or for replacement, but also items for air-conditioning, humidification, materials handling, lighting, power plants, employee welfare, and improvements and extension of mill villages.

It will be noted that TEXTILE WORLD's annual estimates for the years 1945, 1946, and 1947 already total more than the five-year estimate made in 1944 based on mill men's reports of what they would spend in the first five postwar years. This latter figure, as reported in our November, 1944, issue, was $640,972,000 and our total for the first 3 yr. already tops that by nearly 50%.

The first thought might well be that this is an inconsistency, but there are two important considerations which to a high degree reconcile the somewhat divergent figures:

1. The fact that in 1944 textile mill men did not envision the opportunities and necessities of the postwar period and consequently under-estimated their postwar plant expenditures; and

2. The great increase in cost of buildings and machinery from 1944 through the intervening years to date. A mill man thinking of added units in 1944 of course reported them at 1944 prices. Today construction costs are nearly 40% over 1944 and general machinery costs are up 30%.

UNITS UP 16%. Comparing mill expenditures in 1946 with those of 1947, according to our estimates, there is a gain in that one year's time of 35% in dollars. When one notes that the construction-cost index compiled by *Engineering News-Record* rose from 173.14 (1926 = 100) in September, 1946, to 200.84 in September, 1947, one finds a gain there of 16%. The index of general industrial machinery prices as maintained up to April, 1947, by the Bureau of Labor Statistics, shows a rise from 104.0 in April, 1946, to 125.7 in April, 1947—about 20%.

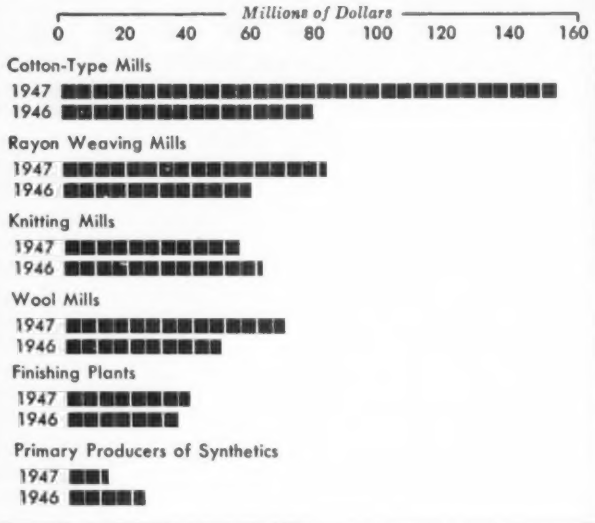
If one adjusts the 1947 expenditure figure back to the

1946 price level on the basis of these two indexes of higher prices on construction and machinery, it becomes $352,000,000, or actually only about 16% over 1946 on the basis of units of buildings or of machines involved. Such a gain is reasonable in view of the increases which might have been expected to follow the removal of building restrictions last spring and to result from the continuing pressure by machinery makers to turn out as much as possible in order to catch up with their two-year back-logs of unfilled orders.

COTTON MILLS LEAD. Looking at the 1947 expenditures by branches of industry, the cotton branch is found to have outrun all others both in absolute total (over one-third of the textile industry's aggregate) and in percentage of increase from last year (nearly double). This is primarily due to machine improvements which have spurred modernization and to the fact that work with new fibers, synthetics, wool-on-the-cotton-system, etc., has brought extensive developments among cotton mills. The latter developments rightfully should be credited at least in part to synthetics, wool, etc., but, because available reports are not uniform in description nor specific in breakdown, it has been impracticable to segregate these activities under their precise headings. Finishing department activities suffer similarly.

Rayon-weaving mills are next in line to cotton among the 1947 expenditures. They are up about 50% over 1946 and they account for about 20% of the aggregate. Next in line is the wool branch with a 40% gain over 1946 and a 16% share in the aggregate. Knitting mills are next with a slight falling off from 1946 and a 13% share in the total. Finishing plants are spending 11% more than last year and hold a 9% share in the total. Primary manufacturers of rayon show no gain in 1947 because most of the large projects were reported as commitments in 1946.

Distribution by Type of Mill of Improvement Commitments Made During 1946 and 1947



How Dollar Values Have Increased on Mill Items

Index numbers on principal items in textile mill expenditures, showing rise from 1945 to present which explains in part some the great increases in dollar values of these expenditures.

	Bureau of Labor Statistics Index of General Machinery Prices (as of Apr. each yr.)	*Textile Machinery Price Index (Yearly Average)*	*Construction Cost Index by ENR*
1945.....	102.3	101.8	147.9
1946.....	104.0	122.1	166.3
1947.....	127.7	142.8*	200.8†

* First quarter † Sept. 1947

INDIVIDUAL EXPENDITURES. Most of the large textile corporations report their annual expenditures for one year in their annual reports usually available in the spring of the ensuing year. The 1947 figures from these sources will not be available before next March. A sampling of these reports issued during the current year indicate individual company expenditures in 1946 as follows: Celanese Corp. of America, $20,476,000; American Viscose Corp., $13,798,000, Pacific Mills, $5,637,000; Colonial Mills, $4,152,000; Dan River Mills, $3,000,000; American Woolen Co., $3,000,000; Riegel Textile Corp., $2,900,000. J. P. Stevens & Co. reported that as of Oct. 31, 1946, it was committed to spend $12,000,000.

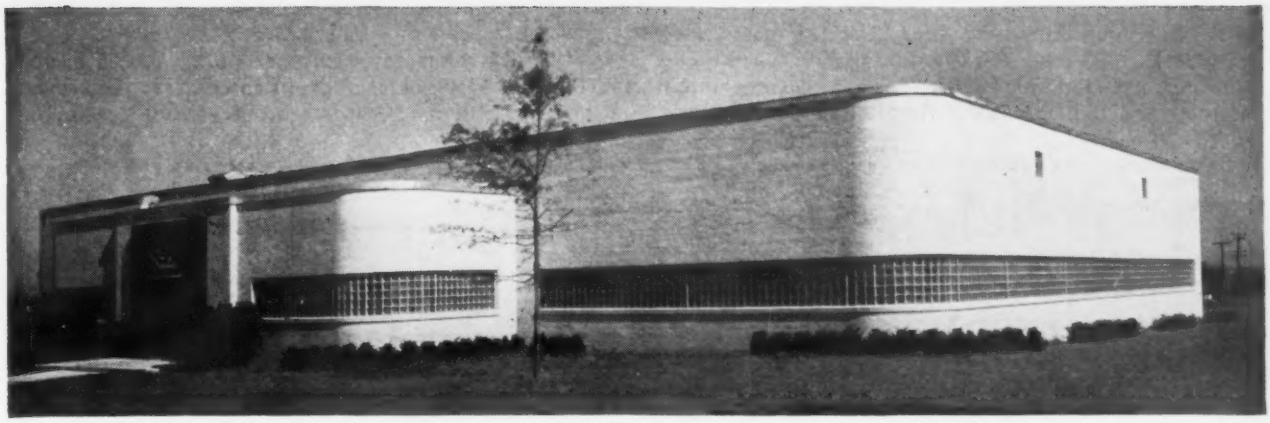
The list of those companies which are spending over $1,000,000 each in 1947 as reported in the "News About Mills" department of TEXTILE WORLD includes the following: Textiles, Inc.; Utica & Mohawk Cotton Mills; Fieldcrest Mills; Kendall Co.; Pacific Mills; Powdrell & Alexander; Riegel Textile Corp.; Continental Mills; Springs Cotton Mills; Merrimack Mfg. Co.; Huntsville Cotton Mills; Proximity Mfg. Co.; Seminole Mfg. Co.; Bates Mfg. Co.; Hadley Mills; Colonial Mills; J. L. Stifel & Sons; James Lees & Sons Co.; Dallas Textile Mills; Arlington Mills; Amoskeag Mills; Chatham Woolen Mills; Virginia Woolen Mills; Prestige, Inc.; Gotham Hosiery Mills; Phoenix Hosiery Mills; Allied Textile Print Works; Pepperell Mfg. Co.

Many substantial propositions were reported in TEXTILE WORLD's mill news department during the year without mention of cost; and since these could not be rated, they were not included, and the above list is consequently incomplete. It merely offers a representative sampling of the larger and more progressive firms which have been leaders among the modernization projects noted during 1947.

The projects over the field as a whole run from minor renovations to enormous new plants. The bulk of the new plants and the most extensive enlargements are in the South. The new trends disclosed in these projects include a great increase of finishing plant capacity in the South, together with several significant woolen and worsted mill developments there. In New England there have been several notable installations of new opening and picking equipment and a number of extensive mill renovations aimed at more efficient layouts.

OUTLOOK REMAINS GOOD. There is still old machinery to be found in the textile industry, which condition means continuance of a good replacement market. There is still good demand for textile products. Export volume alone seems likely to recede in the near future only because of lack of dollar credits with which to pay.

The turn in the tide of expenditures by the textile industry is not yet in sight. There is likelihood that the 1948 figures will top those for 1947. New improvements are in the making among machine manufacturers, and new companies are entering the machine and accessory field. Their confidence that it is not too late to lay their product before an industry which has already spent nearly a billion dollars on new equipment since the end of the war is evidence of their belief that the urge to modernize and the funds to pay the cost will be present in the industry on something close to the current scale for some time to come.



***Modern materials** are combined for maximum utility and beauty in the new building of Sapphire Hosiery Corp., an outstanding example of new mill construction.*

Cost Reduction Keynotes MILL PLANS

***Highlights:** Survey shows that emphasis is on lower operating costs — Increased production sought through engineering techniques and employee benefits—New materials and methods reduce upkeep cost—Older mills modernize to meet competition.*

By WILLIAM A. NEWELL
Assistant Editor, TEXTILE WORLD

COST REDUCTION AND INCREASED PRODUCTION are keynoting current expansion, modernization, and renovation by textile mills. The means to these ends, as determined by a recent TEXTILE WORLD survey, are mainly strict adherence to industrial engineering principles, and the institution of employee benefits.

Practically all new mills under construction have one-story production units, functionally designed to permit straight-line flow of operations and prevent back-tracking of materials. Handling costs are being materially reduced by carefully planned use of all types of materials-handling equipment.

The importance of various air-conditioning systems as a factor in increased production is being fully realized, and mills are sparing no expense to obtain ideal operating conditions to suit the particular needs of fibers processed.

Reduction of heating and air-conditioning costs are being realized through effective use of insulation. Practically all new mills are making use of insulative material in the roof, and some are reducing heat loss through walls to practically nothing by heavy use of these materials. Most of the new plants are windowless, although increased use is seen of translucent glass blocks for their psychological effect of eliminating that "closed-in" feeling on the part of employees.

Special processes for floors are receiving unprecedented use in an effort to reduce floor maintenance costs. For concrete floors, a special process for producing a hard, smooth surface is being used widely. Where wood floors are installed, laminated wood has been used as subflooring; and hard wood, maintained by dry-cleaning methods, is used for the wearing surface.

Wall maintenance costs are being reduced to a minimum by wide use of glazed tile which never requires painting, is easy to keep clean, and which, by its color, contributes to employee comfort and efficiency.

Extensive use of new materials for mill exteriors is noted. Such materials as stainless steel, corrugated asbestos, aluminum sheeting, etc. are being combined with standard construction materials to provide easy-to-maintain and attractive exteriors which contribute to lower operating costs and higher employee morale. Where filtering, cooling, or storage of water is required, utility and beauty are combined by carrying out the operation in the most attractive way possible, as in a fountain or landscaped pool.

New techniques are evidenced in power-plant construction, as the marked trend away from coal to oil, or the use of pulverized coal in units which may be converted to oil. Where coal is still used, costs are being reduced by increased use of coal silos and coal-handling systems.

EMPLOYEE BENEFITS. Increased production through employee benefits is incorporated in the program of practically every mill surveyed. There is an unmistakable increase in the installation of more and nicer employee facilities, as toilets, washing facilities, showers, smoking rooms, etc. Rest rooms are being tiled for cleanliness and color-conditioned to make them more pleasant. Many mills are engaged in construction of new, substantial, and attractive housing facilities; or the modernization and renovation of older mill houses. Parking spaces near mills (some areas are shaded) are being provided in some cases. Waiting rooms for employees waiting for busses are a new advantage in some plants.

Many features to increase employee comfort and effi-

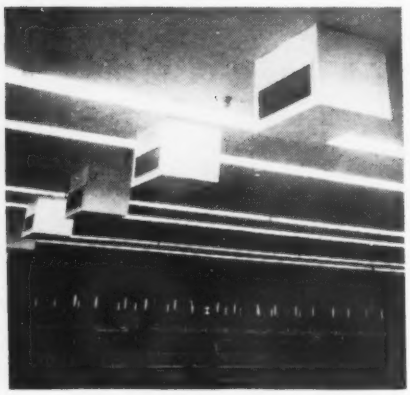
ciency are in evidence, such as increased levels of fluorescent lighting intensities on working surfaces, in some cases as high as 70 foot-candles. Electronically controlled doors are decreasing employee burdens and speeding interdepartmental handling. Color conditioning has become generally accepted and used in all types of textile mills.

OLDER MILLS. All these trends are not evidenced in new mills alone. Many older mills, in an effort to prepare for future competition, are carrying out vast modernization

SURVEY REV

Features of some of the outstanding and modernization which were recent survey are presented on these

Optimum Conditions Sought by Sapphire



***A suspended acoustical ceiling** is an outstanding feature of Sapphire Hosiery Corp.'s new full-fashioned plant.*

The Sapphire Hosiery Corp. plant at Telford, Pa., was completed in the late spring of 1947. This plant is the initial unit of the corporation and is planned with a temporary end wall at the rear to provide for future expansion. At the present time, full-fashioned knitting, looping, and seaming operations are carried on.

In planning this plant the president, Ralph J. Schwarz, emphasized the importance of employee comfort and optimum conditions for the efficient production of full-fashioned hosiery.

The plant has reinforced-concrete floors, on sand fill, with integral finish. Expansion joints were covered with a metal plate flush with the floor. A wood-finish floor is placed in the knitting aisles in depressions formed in the concrete slab. The roof is of roof-deck concrete-plank construction insulated with 2 in. of foam glass, and covered with a 20-yr. bonded roofing. Exterior walls have 4 in. of face brick, light buff in color, backed up with 4 in. of cinder block over which 2 in. of foam glass insulation was applied. The interior face was covered with 4 in. of cinder block which was covered in some departments with plaster.

The plant is windowless, but light openings are filled with 8x8-in. double-ribbed glass block to curtail glare and to direct rays of the sun. The entrance is "Sapphire Blue" terra cotta, matching the standard hosiery package used by the company.

The temporary rear wall is of frame construction covered with ⅛-in. smooth asbestos board, and on the exterior with corrugated siding. A 2-in. blanket insulation is installed between the outside and inside surfaces.

Ceilings in all rooms except the boiler and storage rooms are suspended. Offices, seaming and looping departments, knitting-machine room, and corridors are provided with an acoustical ceiling composed of 4x8-ft. sheets of ½-in. asbestos board on which is laid 2 in. of glass-wool muslin-covered batts. Troffer fluorescent lighting fixtures are set flush with the finished ceiling, and give a lighting intensity of 50 foot-candles on the working surface.

The women's lounge is decorated in "Sapphire Blue," floors of all toilets are asbestos tile, and walls are glazed tile.

The air-conditioning system constantly maintains conditions at 80° F. and 50% r.h. All duct work is concealed behind the suspended ceiling, and outlets project through in a regular and attractive pattern.

With the exception of the boiler and air-conditioning equipment the plant is constructed on one level and occupies ground floor area of 13,944 sq. ft.

Lockwood Greene Engineers, Inc., was the engineering firm for the plant.

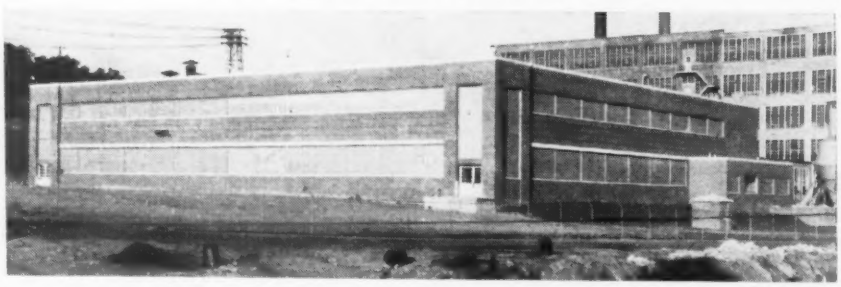
Synthetic Finishing Plant Has Straight-Line Flow

A one-story, straight-line-operation finishing plant for United Merchants & Manufacturers, Inc., containing about 110,000 sq. ft. of floor space, is in the final stages of construction at Old Fort, N. C. Designed for straight-line processing from receiving to shipping, the plant can perform any finishing operation on any synthetic fabric. The office section is the only part of the plant built on two floors. The production section, a single large room, is windowless except for a band of translucent glass-blocks near the ceiling; and the plant has glazed-tile walls throughout. Kalman floors are used throughout, and the ceiling is made of pre-cast concrete slabs on which were laid 2 in. of cork insulation and a 5-ply tar and gravel roof. A rail siding extends the full length of the main building, with adjacent concrete platforms for receiving at one end and shipping at the other.

Water for operating purposes is obtained from a 5,000,000- to 10,000,000-gal. artificial reservoir formed by a large-scale excavation and erection of a dam. Water is pumped by five vertical pumps through a filter unit either directly to the plant or to an 800,000-gal. storage tank.

The plant has a novel drainage system which will prevent accumulation of liquids at all times. Constant atmospheric conditions are maintained by a Carrier air-

Ware Shoals Builds Finishing Plant



***Extensive use of glass blocks** is evidenced in construction of new rayon-finishing building at Ware Shoals Mfg. Co., Ware Shoals, S. C. J. E. Sirrine Co. was the engineer, Daniel Construction Co. the contractor.*

programs. These include new machinery installations, overhauling of old machinery, and installation of new subassemblies, especially those which have ball-bearings, are lifetime-lubricated, and have other cost-saving, efficiency-increasing features. Besides modernizing machinery, older mills are sealing windows so that they may be used for light transmission only; they are modernizing air-conditioning equipment, renewing floors, color-conditioning, installing better employee facilities, and taking advantage of all new methods and materials possible.

EALS PLANS

examples of construction, renovation, encountered in TEXTILE WORLD's and the following pages.

conditioning system, and illumination is provided by moisture-proof lights. Several large shower and locker rooms with tile walls are provided for employees. A control and testing laboratory has been completely furnished with the latest equipment. All processing equipment for the plant was especially designed.

The power plant, located just across the rail siding has masonry walls and a reinforced-concrete and structural-steel frame. Two 50,000-lb. steam boilers which may use pulverized coal or oil and one turbine furnish the power.

The plant was designed by Six Associates, Inc., and is being built by Potter & Shackelford, Inc.

Hosiery Plant Holds to Windows

The new plant of the Propper-McCallum Hosiery Co. is located at Florence, Mass. on a site adjacent to the existing plant. The new structure was substantially completed during the early summer of 1947 and the plant has been in operation since midsummer.

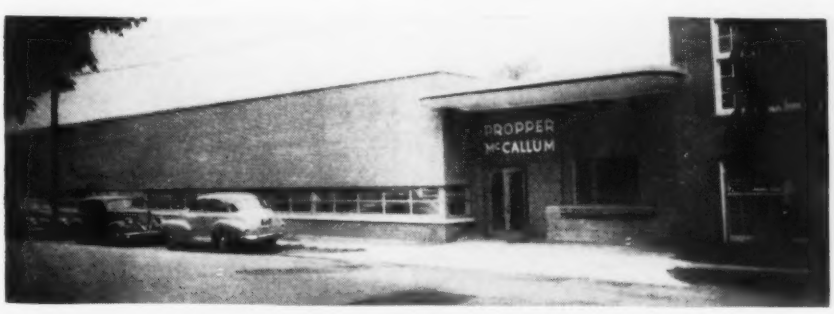
The structure was planned as an addition to the existing full-fashioned-hosiery plant and was constructed to house the new 32-section full-fashioned knitting machines. It was planned with a central aisle, a line of machines on each side, and long-span roof trusses providing the minimum of column interference.

With the exception of the air-conditioning equipment, which is housed in the basement machine room, the structure is on one level. In order to provide unloading facilities at street level, the loading dock is 4 ft., 6 in. above the floor of the plant. A belt conveyor carries cartons of raw material to raw-stock storage room and semi-finished goods to the platform level.

While the building is completely air conditioned, it was felt desirable to provide a continuous-strip window in order that employees could look out. This window is at eye level for an operator standing at a machine, with the head of the opening 7 ft. above the floor. Windows are double-glazed to minimize condensation during cold weather due to the high humidity of the atmospheric conditions inside.

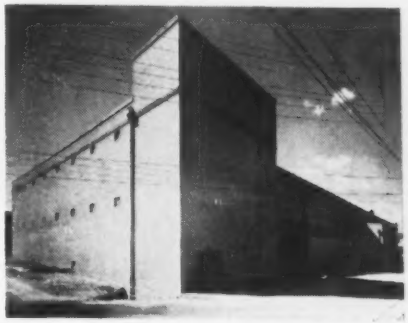
The total floor area of the manufacturing area is 20,308 sq. ft.; the air conditioning equipment room located in the basement occupies a total area of 3,232 sq. ft.

The plant was designed by and constructed under supervision of Lockwood Greene Engineers, Inc.



***The windows** of Propper-McCallum's new hosiery plant allow employees to look out but are double-glazed to minimize condensation.*

Dunean Adds to Throwing Plant



***A two-story throwing addition** has just been added to the main plant of Dunean Mills, Greenville, S. C. Containing over 100,000 spindles, the plant is refrigerated by Carrier Corp., has glazed-tile walls, and is windowless. It was erected by Daniel Construction Co.*

Warehouse Built By Dan River

A new reinforced-concrete warehouse built for Dan River Mills is an 8-story building, 150x150 ft. in plan, with a total of approximately 200,000 sq. ft. of floor space, including the loading platforms. There is also a cotton classing room, 50x75 ft., on the roof of the building. The building is of reinforced flat-slab concrete construction, and the floors are finished with Kalman concrete finish. There are fire walls dividing most of the stories into two areas of 11,000 sq. ft. each. On several floors there are three areas of 7,500 sq. ft. each. The story heights are 10 ft. except for the 7th and 8th stories, which are 18 ft. each.

The building was designed for the dual purpose of storing cotton bales and cases of finished goods.

The building is served by a railroad siding at the 5th floor level, and shipping out by truck is done from the 1st floor. There are two large freight elevators (10x 12-ft. platforms, 6,000-lb. capacity each) for handling cotton and cased goods into and out of storage, and one passenger elevator serving the cotton-classing room.

The cotton-classing room has a north skylight, 75 ft. long, built in accordance with government standards. The room is equipped with an evaporative-cooling and air-conditioning system which was installed by Carrier Corp. The system is designed to maintain 65% r.h.

The building adjoins the old cotton warehouses and is only 60 ft. from the piece-goods bleaching, dyeing, and finishing plant. It is so designed that the floors

Storage space of 200,000 sq. ft. *is provided in Dan River's new 8-story warehouse.*

will match the level of floors in the finishing plant. It, therefore, has the flexibility for use in conjunction with both the finishing plant and the old warehouses.

The building was completed in the spring of 1947. It was built by C. M. Guest & Sons, and was designed by Lockwood Greene Engineers, Inc.

Opelika Bleachery Erected by Pepperell

A new bleachery for the Pepperell Mfg. Co. has been erected near the site of the company's present weaving mill at Opelika, Ala. The bleachery is located 500 ft. west of the cotton mill and is so designed that the two can be linked by an addition in the future and have corresponding floors at the same level.

The buildings are constructed of structural-steel frame, brick walls with limestone trim, steel sash, and precast concrete roof decking covered with rock-cork insulation and tar-and-gravel roofing. The floors are concrete with Kalman finish and Duriron floor drains, except the second floor which is laminated wood with a maple top finish. Bins for bleached cloth are lined with white ceramic tile, while those for steeping or souring gray cloth are concrete coated with a chlorinated-rubber paint.

Fume-resistant paint is used in areas subjected to chemical fumes and high moisture.

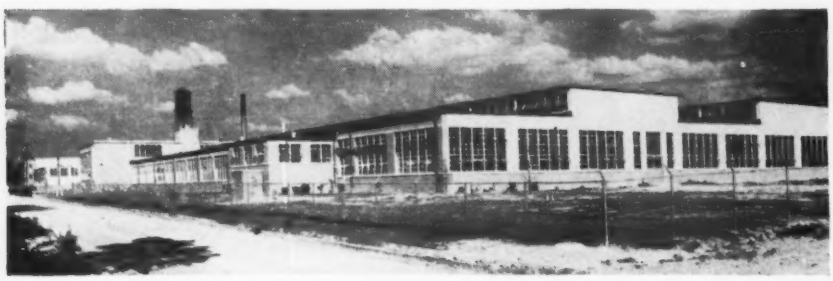
The plant is provided with tiled toilets, showers, and locker rooms. Stairways are fireproof with tiled wainscot, and there are two large high-speed fully automatic elevators and a roll lift for carrying cloth to the second floor.

The ventilating system is designed to prevent fog in the wet-processing departments.

Water for the bleachery is supplied by a new filter plant having a capacity of 3,000,000 gal. per day. Raw water is obtained from the City of Opelika through the mill's pumping station and 2½ mi. of pipe connecting with the filter plant. Two raw water pumps of 1,400- and 2,100-gal.-per-min. capacity are remotely controlled from the filter plant.

Heat is supplied from a brick, steel, and concrete boiler house, 97x63 ft. The two Babcock & Wilcox boilers are fired by pulverized coal and deliver 40,000 lb. of steam per hr. B&W air heaters and coal pulverizing equipment are used, also American Blower forced- and induced-draft stub stacks, Link-Belt coal handlers, and Bailey meters and control instruments.

Robert & Co. Inc., were the architects and engineers, and Batson-Cook Co., the contractors.

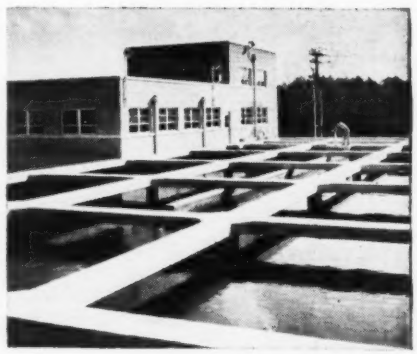


Brick and limestone *are combined in the exterior construction of Pepperell's new bleachery located adjacent to the weaving mill.*

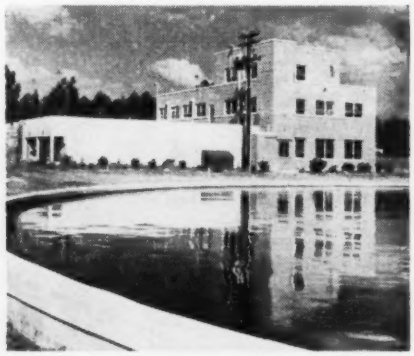
Weave Room Air Conditioned at Mills Mill

Modernization of the weave room at Reeves Bros.' Mills Mill No. 2, Woodruff, S. C., involves installation of a new air-conditioning system now being installed by Carrier Corp. The cost for the installation, including the necessary fan rooms, will be approximately $80,000. The weave room is 250x190 ft., approximately 48,000 sq. ft. and contains 700 looms.

There will be two fan rooms located at the quarter points of the building. Each fan room will contain a complete central station equipped to handle approximately 104,000 cfm. of air at 2 in. static pressure. The system is designed to produce in conditioned spaces 85% relative humidity, with the dry-bulb temperature not to exceed 84° F. in the summer time and with suitable heating capacity to maintain 80° F. dry-bulb in the winter. An important feature is the matter of zone controls. There are twelve zones, each equipped with individual hygrostats and thermostats for controlling the relative humidity and dry bulb temperature within the limits possible with evaporative cooling. The conditioning system also was so designed that refrigeration can be added in the future to maintain constant temperature throughout the year as may be desired. The project is being engineered by Lockwood Greene Engineers, Inc.



Chemicals mixed in the raw water *at the filter plant precipitate the solid matter in the coagulation basin.*



Purified water *is stored in a 1,500,000-gal. clear well beside the main filter plant building. Water is pumped from here to a 650,000-gal. standpipe near finishing plant.*

Roof Construction Changed at Drayton

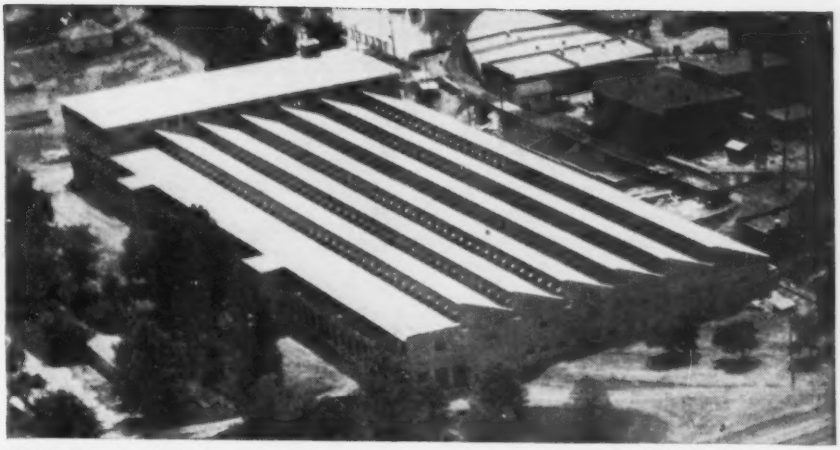
An interesting and important alteration and modernization job has recently been completed on the weaving building of Drayton Mills, Spartanburg, S. C., manufacturers of cotton and rayon fancy goods.

It was desired to install a modern and effective system of air conditioning in this building and to accomplish this, and produce best building conditions for air conditioning, the building was converted from a sawtooth-roof building to a flat-roof windowless building. To accomplish the latter, the side-wall sash was removed and the window openings bricked up.

The accompanying illustrations show the sawtooth-roof construction before its removal and the flat roof which replaced it, also the new enclosures on roof for the air washers and fans of the air-conditioning system.

All natural lighting being excluded by the alterations, high-intensity fluorescent lighting in long sections furnishes excellent illumination at all times.

The building alterations were made by the Daniel Construction Co., contractors, and Buensod-Stacey Air Conditioning Inc., made the air conditioning installation. Lockwood Greene Engineers, Inc. were the engineers for the project.



BEFORE: *For best air conditioning it was necessary to remove the saw-tooth roof from Drayton Mills' weave shed*

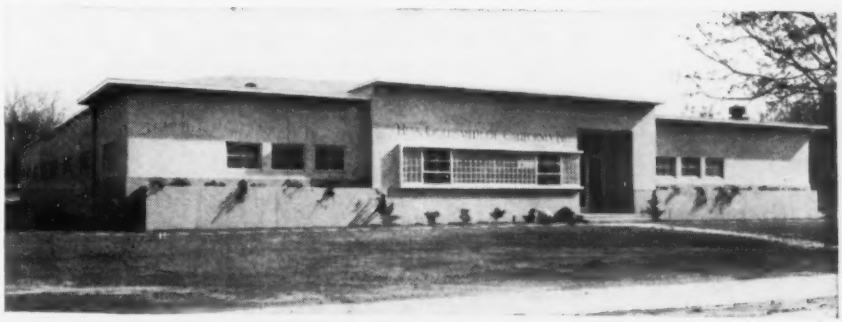
AFTER: *The building was given a flat roof and made windowless by extensive renovations.*

Tricot Plant is In California Manner

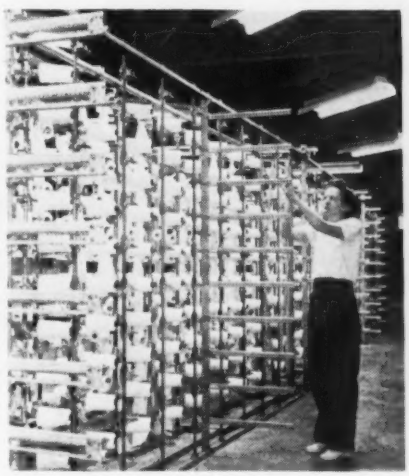
Typical of small-plant construction in southern California is the newly opened tricot mill of Hess, Goldsmith of California, Inc., at Pomona, Calif.

The mill is 100x160 ft., one story, with roof supported by a series of two 50-ft. bowstring timber trusses across the building, with about 20-ft. bays. The only columns are the series down the center of the building to support the center junction of the trusses. The roof is constructed with timber rafters, wood sheathing, and a built-up roofing on the exterior. Air conditioning is installed to provide optimum temperature and humidity. The ducts are hung from the ceiling. Lighting is by fluorescent lamps.

Tricot-warping equipment is by Robert



Pomona plant *of Hess, Goldsmith of California, Inc., is 100x100 ft. and of one story.*



Creel of rayon yarn *feeds Reiner warper.*

Beaming ends *of two Reiner warpers at Hess, Goldsmith plant are shown.*

Tricot-knitting-machine *operator repairs end.*

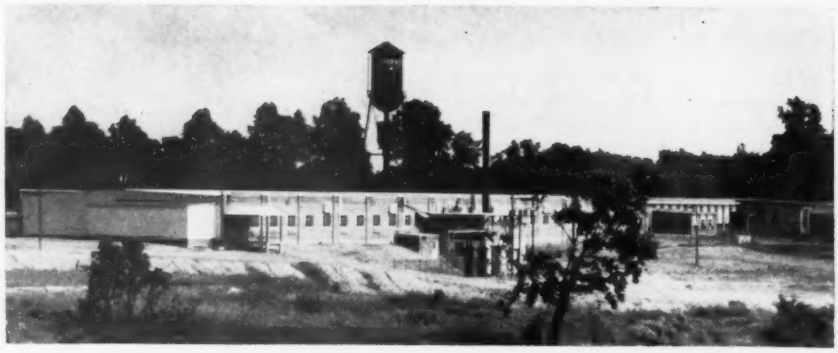
Reiner, Inc., and the tricot machine installation is in part by Reiner and in part by Whitin Machine Works. Static eliminators are provided. This is the first modern tricot plant in southern California. It was completed several months ago by the Austin Co., Cleveland, Ohio, engineers.

A. B. Clepper is vice president in charge of operations. T. E. Tate is production manager. Charles Rothstein is in charge of west coast sales and distribution.

Globe Mills Modernizes Equipment

A broad program of expansion and modernization is nearing completion at the combed-knitting-yarn plant of Globe Mills at Mt. Holly, N. C. An addition of 35,000 sq. ft. has been erected; and Whitin spinning frames having a total of 3,000 long-draft spindles, central-oiling systems, ball-bearing cylinders, and other features have been installed. All old spinning frames were equipped with ball-bearing cylinders, and some new Whitin cards, drawing frames, slubbers, and twisters have also been added. All older machinery has been reconditioned and put in top-notch operating condition to reduce maintenance and operating expense. All old roving frames have been equipped with new chain drives, compounds, and cut-tooth bobbin gears made by Precision Gear & Machine Works; with new Whitin spindles, new builders, bolsters, etc.

An innovation in the air-conditioning system utilizes inlets located above the windows and outlets located below the windows. This causes the maximum effect of air changes to be felt at machine and operator level. Fluorescent lighting has been provided in all departments; and modern toilets installed throughout. They have tile floors and walls, hot water, showers, and include smoking rooms. A straight-line, single-story flow of materials has been effected by the renovation. Cotton enters the mill from a siding located at one end, then passes through consecutive processing departments. The old heating system has been replaced by an automatic, oil-fired, Pacific boiler.



***A new addition** (seen at left) to Globe Mills enables utilization of straight-line production flow.*

***Installation of fluorescent lighting,** improvement of air conditioning, repainting, renewal of floors by use of the Tennant System of dry cleaning, as well as complete reconditioning of machinery have improved Globe Mills' ability to compete in the coming drive for quality and market.*

Harmony Grove Mills

Harmony Grove Mills, Commerce, Ga., manufacturer of brown sheetings, shirtings, and drills, is building a two-story cotton storage warehouse, approximately 25,000 sq.ft. to each floor. This will contain six compartments on each floor level, separated by brick fire walls. The warehouse is so constructed that local cotton can be handled at the street level on the first floor and cotton by rail and trucks can be handled at the second floor level. On the second floor, there will also be a cotton-classing room built according to U.S. government standards. J. E. Sirrine Co. are the engineers, and the contractor is Fennell Construction Co.

Bath Mills

Expansion of the Bath Mills plant of United Merchants & Manufacturers, Inc., Bath, S. C. is nearing completion. A new weave room has tile walls, a Kalman-finished concrete floor, washed-air humidification, and fluorescent lighting. A waiting room for use of employees awaiting busses is a new feature of the plant.

Finewear Manufacturing Co.

The Finewear Mfg. Co., a newcomer to the industry, has started operations in the production of spinning yarns, rayon staple yarns, and blends. The productive equipment consists of preparatory machinery and 3,584 spinning spindles. This plant is considered one of the most flexible units in the South and is capable of producing a wide range of numbers, 4s to 40s, from blends of assorted deniers, up to 4 in. in. length. The machinery is laid out for straight-line flow of material, to prevent lost motion or backtracking of stock in process. Hand-handling and wastage are eliminated or reduced to a minimum.

The buildings that the Finewear firm occupies are not new, but are a part of the properties owned by the Batesville Mfg. Co., a water-driven mill which went out of existence during the middle 20's. The old walls were found to be solid; new floors, windows and roofs were added, and modern building fixtures were installed. Operations are directed by Albert J. Goldsmith who is being assisted by Job J. Mills, textile engineer.

Huntsville Manufacturing Co.

Huntsville Mfg. Co., Huntsville, Ala., is engaged in a 6-month, $2,000,000 expansion program which will add 27,000 sq. ft. of floor space to mill No. 1 and 80 new spinning frames having a total of 9,834 spindles. A substation is now under construction to increase the supply of electricity, as well as additional cotton-storage space and changes are being made to provide a separate water supply to the mill and village.

Additional production space will be provided by erecting a two-story addition. When complete, materials will pass through the mill in production-line manner, and inter-floor handling of materials will be eliminated.

Preparations are under way to add 109 new looms to No. 2 mill. Cloth storage will be eliminated, and facilities are planned to permit direct loading of cloth bales on the freight cars by use of fork lift trucks.

Joanna Expands Shade Cloth Manufacture

A new wing for manufacture of window-shade cloth has been added to Joanna Textile Mills Co., Goldville, S. C. Of steel-frame and brick-wall construction, the new plant has glass-block windows and maple floors over plank subflooring. Completely humidified, the plant has about 90,000 sq. ft. of floor area. Daniel Construction Co. was the builder.

Springs Cotton Mills

A new bleachery for Springs Cotton Mills of brick, concrete, and steel construction is nearing completion at Lancaster, S. C. The plant is 1,015 ft. long and 405 ft. wide, and has a floor area exceeding 11 acres. The final cost is estimated at $15,000,000. A power plant able to supply 15,000 kw. has been erected, and a tremendous water-supply basin, capable of supplying 20,000,000 gal. of water per day was excavated. To prepare the site for building, a large hill was levelled by moving over a million cubic yards of earth. Because the site for the power plant was on alluvial fill, it was necessary to drill to bed rock and support the power plant on cement-filled iron-pipe piles 40 ft. in length.

Walls will be tile in all production departments. Continuous bleaching ranges of the Du Pont and Becco types will be installed. Homes will be erected for key employees.

Belding Heminway Corticelli

The new Belding Heminway Corticelli throwing plant at Morristown, Tenn. is of fire-proof reinforced-concrete, steel, and brick construction. It consists of one large main floor of approximately 55,000 sq.ft. which is to be utilized for manufacturing area alone. The basement under part of the building contains approximately 20,000 sq.ft. and will be used for storage and recreation. The manufacturing area is fully air-conditioned by automatically controlled equipment.

The spinning and twisting equipment, mostly large-package, was purchased from the Atwood Machine Co. The coning spindles were purchased from the Foster Machine Co., and the reeling equipment from the Fidelity Machine Co.

The soaking room was designed by the company's engineers to take care of all types of both solvent and water soakings. The extractors, storage, mixing, and handling equipment were specially designed for the work to be done at the plant.

The entire mill will be serviced by electricity, including the heating of the plant itself and hot water processing. It is the only throwing plant operated entirely, or 100%, by electricity, it is believed.

When the mill is in full production in early 1948, it will employ about 250 people and process or produce 30,000 to 50,000 lb. of thrown yarn weekly, depending upon size and twist. The mill is equipped to handle nylon and rayon threads, crepes, combinations, and hosiery yarn.

Seminole Mills

Additions are being made to Seminole Mills, Clearwater, S. C. The work consists of construction of a new picker room and switch house, a new cloth-room and warehouse, an addition to warehouse No. 13, a two-story extension on the weave room and spinning room, a service building and cafeteria, a second story over the weave room, and approximately 500 ft. of concrete platforms averaging 7 ft. 6 in. wide. Windows in the present main building are being bricked-up for the air-conditioning system, the entire first floor in the main building is being replaced with new floor, and the main plant is being generally remodeled and modernized. A new substation and complete revamping of the electrical-distribution system for both power and lighting are in progress. Foundations on the first three buildings are being poured at the present time, and structural steel was scheduled for delivery the end of October. Completion will be late 1948. The plant produces spun-rayon fabrics. United Merchants Laboratories, Inc., are the engineers, Potter & Shackelford, Inc., the contractor.

Wearlong Glove Manufacturing Co.

Wearlong Glove Mfg. Co., Conover, N. C., is completing a new glove and knitting plant. The building is one-story of standard mill construction with steel frame and steel sash. Air-conditioning equipment was installed by Carrier Corp. A cafeteria for employees was included as a feature of the new plant. The general contractor was Herman Sipe Co. of Conover, N. C.; and the engineer is J. E. Sirrine Co.

Swift Spinning Mills

Swift Spinning Mills, Columbus, Ga., is building an extension to its picker building, 28x130 ft., to consist of one story and a dust room. The new building, which will accommodate three new Saco-Lowell pickers, has steel framing, concrete floors, brick walls with steel sash. It is mounted on high steel columns to maintain a driveway for trucks under the floor of the dust room. Robert & Co. is the architect and engineer.

Muscogee Manufacturing Co.

Muscogee Mfg. Co., Columbus, Ga., is starting construction of a two-story addition 30x100 ft. which will connect mill No. 3 with mill No. 4 and provide room for carding machinery. The program also includes a new one-story shipping-room building. Buildings are designed for steel beams, wood floors, aluminum wall paneling with steel sash. Robert & Co. is the architect and engineer.

Queen Dyeing Co.

The Queen Dyeing Co., Providence, R. I., bleachers, dyers, and finishers, is reconstructing a present one-story building by erecting a steel frame, plank roof, and installing a concrete floor. The new area will have a white dry room. Further improvements planned will provide space for black dyeing, soaping, and napping. Lockwood Greene Engineers, Inc., is the engineering firm.

Inman Mills

Remodeling and modernizing of 250 houses is being carried on by Inman Mills, Inman, S. C. Work consists of bricking up under the houses, new sheetrock on all walls and ceilings, reflooring, adding of new millwork and trim where necessary, new plumbing, and painting. The work is approximately 50% complete, and is scheduled for completion early in 1948. Potter & Shackelford, Inc., is the contractor.

Peerless Woolen Mills

Peerless Woolen Mills, Rossville, Ga. recently put in operation a complete air-conditioning system in their 150x450-ft. wool-carding room which accommodates 60 sets of three- and four-cylinder woolen cards. The system which was supplied under contract by the Bahnson Co. has a capacity of 260,000 cfm. and 400 tons of refrigeration. The equipment is housed in a new building 40x100 ft., one story. Robert & Co.is the architect and engineer. Also recently completed was a new three-story warehouse, 151x300 ft., with reinforced-concrete columns, floors, and roof, and brick-curtain walls. The first floor is used for wool scouring and carbonizing.

(Continued on page 220)

Table I

Cotton Classer's Method of Designating Laboratory Data on Length Uniformity Ratios.

Ratio Reported From Laboratory	Description To Be Used by Classer
Above 80	Good uniformity
76 to 80	Average uniformity
71 to 75	Slightly irregular
70 and below	Irregular in fiber length

Table II

Comparisons Between Laboratory Tests for Fiber Strength and Cotton Classer's Estimate of Fiber Strength.

Laboratory Report in 1000 Lb. per Sq. In.	Cotton Classer's Description
100 and above	Superior
90 to 99	Excellent
83 to 89	Very good
73 to 82	Average
72 to 77	Fair
Below 72	Weak

Fiber Testing Aids

HIGHLIGHTS: *Correlation tables show classer how to coordinate fiber-testing data and classing procedure—Dept. of Agriculture bulletin based on survey of 336 cotton mills showed 80% of cotton was purchased on standard description for grade and staple—Survey shows more mills doing fiber testing supplementary only to regular classing procedure.*

By SETH CARTER

THERE IS A constantly increasing desire on the part of most mill men to know more about the properties and quality of the cotton they are buying and using. Improved laboratory methods and devices have made increased information, along with a greater degree of precision, more easily and quickly available.

How much of the available information can be profitably applied to the raw material and finished products of any mill must be decided by each individual mill man. His decision will be largely governed by the nature of the goods manufactured and the quality requirements of finished goods. He can also be guided by other mills' methods of testing which have been effective in safeguarding quality and in supplementing their routine cotton classing on similar classes of goods.

EXPERIENCE OF 336 MILLS. Any mill man considering an extension of present controls over the quality of the cotton purchased and the maintenance of quality requirements of the finished product will find valuable information for his guidance in the U. S. Dept. of Agriculture's new bulletin (July, 1947) "Cotton Mills Requirements as Related to Improved Cotton Quality and Marketing Practices."

The bulletin is a survey of methods and practices used in 336 mills in the United States. It covers seven general types of products, and it can be considered as representative of mills on each type of product. It was found that about one-half of the cotton products manufactured in the mills surveyed must meet definite specifications for strength and appearance.

About 44% of carded weaving yarns and 60% of combed weaving yarns were subject to specifications. On both carded and combed knitting yarns, strength specifications applied to about one-half of domestic products. All tire cord and most of the sewing thread manufactured were kept to high standards of strength. Fine yarns showed a higher percentage of bales tested than medium and coarse yarns, and were held to high standards of strength and appearance.

Appearance was considered a very important factor in combed weaving yarns while definite appearance specifications for carded weaving yarns were involved only in one-third of the products. About 50% of both carded and combed knitting yarns was required to meet definite appearance standards, and cleanliness and uniformity of yarn size were additional important factors. Appearance was shown to be more important than strength in fine yarns and of less importance in coarse yarns. Appearance was of little importance in tire cord, but high-quality appearance standards were demanded in sewing thread.

FIBER-TESTING EXPERIENCE. From the mills surveyed, fiber strength was considered the most important fiber property affecting yarn quality, with fiber length and uniformity, fiber fineness, and fiber maturity of importance following in the order named. The tire-cord and sewing-thread manufacturers showed the highest percentage of bales tested for all four factors mentioned, with strong emphasis being placed on fiber-strength testing. Carded and combed knitting yarns showed the lowest percentage of bales tested for any of the four factors, with carded and combed weaving yarns but slightly higher on the list.

There is an interesting survey in the bulletin on mill methods of obtaining the qualities of cotton required. Approximately 80% of all the cotton bought by American

Table III

Comparisons Between Laboratory Reports of Fiber Fineness and Cotton Classer's Estimates of Fiber Fineness.

Laboratory Report of Fiber Fineness in Micrograms per In. of Fiber Length	Cotton Classer's Estimates of Fiber Fineness and Description Used
Below 3.0	Very fine
3.0 to 3.9	Fine
4.0 to 4.9	Average
5.0 to 5.9	Slightly coarse
6.0 and above	Coarse

Table IV

Comparisons Between Laboratory Tests of Neps per 100 Sq. In. and Cotton Classer's Estimate of Impurities in Raw Cotton.

Laboratory Test Results in Neps per 100 Sq. In. of Card Web	Cotton Classer's Description Used In Estimating Impurity Content of Raw Cotton (Before Opening)
1 to 15	Low
16 to 25	Average
26 to 40	High
Above 40	Very high

the COTTON CLASSER

mills (1945) was bought on standard description for grade and staple length and about 20% on private description. The combed-knitting-yarn and sewing-thread-yarn spinners bought a higher percentage of their cotton on private description than did spinners of other types of yarn.

VARIETY AND PLACE OF GROWTH. The importance of variety as a factor of potential spinning value is being more generally recognized. The survey showed that 12% of the cotton bought in 1945 was bought on variety designation. Place of growth was specified for about one-third of the purpurchases. Variety was considered of most importance with the tire-cord spinners and of least importance with the carded, weaving, and knitting-yarn spinners. Place of growth was important with combed-weaving-yarn, sewing-thread and tire-cord spinners. The close relation between variety and place of growth is noted in the survey. For the fine-yarn spinners (51s and above), about one-third of the purchases specified variety; and more than one-half specified place of growth.

Only 13% of the cotton was bought by mills that considered the economy of the raw cotton. Economy of processing was considered of primary importance with 22% of the combed-knitting-yarn spinners, but of less importance to the carded-knitting-yarn and carded-weaving-yarn spinners. The survey recognized that the rate of carding greatly affected the processing economy. The rate of carding shown varied from 10 to 15 lb. per hr. for cottons shorter than 1 in. to from 5 to 8 lb. per hr. for the longer staples.

The importance of maintaining a standard quality of trade-marked goods increased progressively from almost one-fifth of the cotton used in coarse counts to about one-half used in fine-yarn counts. Trade-marked quality was considered important to the extent of two-thirds of the sewing thread spun and about one-half of the combed yarn made.

Laboratory fiber tests proved valuable as a supplementary source of information to indictae the potential spinning value of cotton. The usual practice among the mills was the selection of five representative bales from each lot which were subjected to laboratory tests to provide more precise information than that obtained in the usual routine classing. Many progressive mills have laboratories equipped for this testing. Other mills can have their testing done on a fee basis in the laboratory of the U. S. Department of Agriculture.

CLASSING AND TESTING. The preceding brief summary of this valuable survey shows that many additional mills are realizing the importance and value of fiber testing as a guide in selecting suitable cotton to maintain established quality standards of their finished products.

But, as stated in the bulletin, fiber testing is only supplementary to the regular cotton classing. It is not implied that cotton-classing procedure is eliminated or abbreviated. There is, as yet, no suitable substitute for manual classing. The keen judgment of a skilled classer is still necessary to safeguard the quality of cotton delivered to the mill and to detect faults and irregularities not detected in the laboratory.

One factor limiting the value of laboratory testing is the small number of bales tested from each lot (usually about five). It is assumed that all other bales in the lot will show the same fiber properties. This assumption may be true in some cases, but there are many known instances where this has not been true. Cases have been known where the two sides and center of the same bale have varied in length and quality.

Some progressive mills use fiber-testing information from the laboratory to correct or confirm the classer's prejudgment of fiber values. All the fiber data obtained from the laboratory is sent to the classer with identifying marks and bale numbers. The classer can thus check his valuation of lots against the precise laboratory determinations.

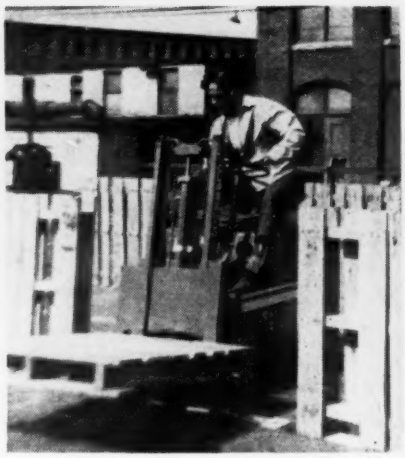
COORDINATION. To get the value of these comparisons between the classer's valuation of fiber quality and the laboratory findings, it is necessary for the classer to make detailed records of his estimates of bales classed. With suitably prepared record forms for checking each bale, this important data will not entail much additional work for the classer.

The classer's grade designation now present on all classification sheets will take care of color, leaf, and preparation. It is good practice to note the nature of the leaf contained in the cotton. Large leaf is easily removed in the preparatory processes, while the small pin or pepper trash is much more difficult to remove and will often affect the appearance of the finished yarn.

(*Continued on page 216*)

1. ***Obstacle course*** *is being explained by Lansing English to two trainees.*

2. ***Maneuvering pallets*** *in theoretical aisles is important part of trainee work.*

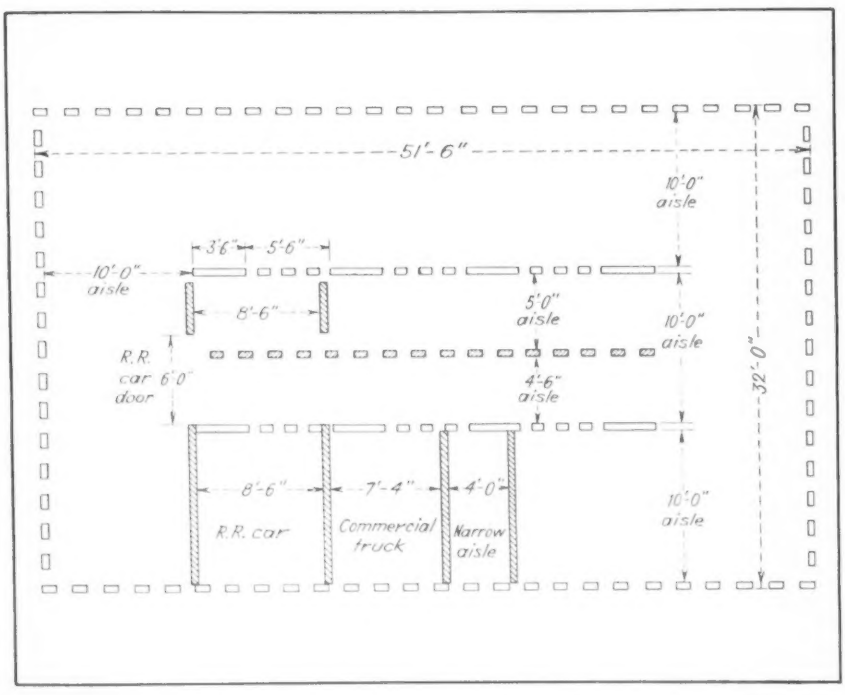


3. ***A tight squeeze*** *on the training ground is being taken in stride by H. Flanagan.*

Mill Builds Course to Train

HIGHLIGHTS: *Arlington Mills uses an obstacle course to train men before going on the job—Course represents typical aisles, doors, cars, etc.—Materials-handling engineer laid out system—Results: no accident by any trained operator.*

By THOMAS R. HADFIELD, *Director of Training, and*
J. LANSING ENGLISH, *Materials-Handling Engineer*
William Whitman Co., Inc., Arlington Mills Div., Lawrence, Mass.



Layout of truck-training course *in yard of Arlington Mills shows aisles, doors, etc., of correct widths.*

TO UTILIZE to best advantage the modern devices and systems for handling materials, Arlington Mills Div. of William Whitman Co., Lawrence, Mass., recently put upon one man the responsibility of studying and applying such methods in its own operations. This specialist, titled the "materials-handling engineer," was attached to the plant engineer's office. One of his first introductions was the use of the fork lift truck to facilitate the handling of large quantities of raw materials, baled wool, chemicals, and supplies, as well as various end-products and by-products, with a minimum of human effort. It was apparent that, if the mill was to use them to handle material, the trucks would have to be operated safely or satisfactory results could not be expected.

Certain minimum basic qualifications were established which each candidate for fork lift truck operator had to meet. He had to be experienced in the driving of an automobile or truck and had to be able to pass the plant's medical and eyesight examination. The prospects were recruited from the departments in which the trucks were to operate. It was thus possible to make the operators' job a promotion from plant laborer.

TRAINING PLAN. Before the operators would be allowed to operate their trucks in and around the plant, it was decided that they should be given a course of training covering safety, warehousing, and the theory of han-

4. ***Finer points*** *are being explained by Mr. English to the trainee.*

5. ***Proficient operators*** *take their places in Arlington's warehouse after 10 hr. on obstacle course and about 100 hr. on the job.*

FORK LIFT TRUCK Operators

dling materials. The trainee responded more quickly, easily, and completely to this instruction than by putting him on a truck as a student observer. The trainee was regarded in the same light as a green hand coming into one of the manufacturing departments; that is, he must be trained in the use and care of his machine before he was to be considered competent to operate it.

The materials-handling engineer, the safety engineer, and the director of training planned the course of training for the new operators. A practice area out-of-doors and remote from production areas where other employees are engaged was selected; and, with the aid of the mechanical department, painted stripes were put on the paving to mark out the features of the area. To represent walls, the sides of commercial trucks, and freight cars, empty pallets standing on end were used. If, in practice, one of the new operators happens to hit a pallet, the worst that he can do is to knock it over, and the results of such a mishap are of no consequence.

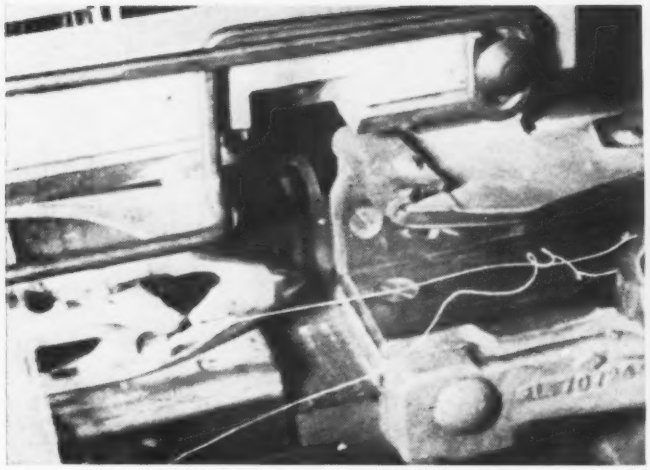
The safety engineer prepared a discussion on safety and also procured the sound-slide film, "You and Your Tractor," prepared and filmed by the Carnegie-Illinois Steel Corp. The director of training co-ordinated the efforts of the materials handling and safety engineers and conducted the indoctrination session.

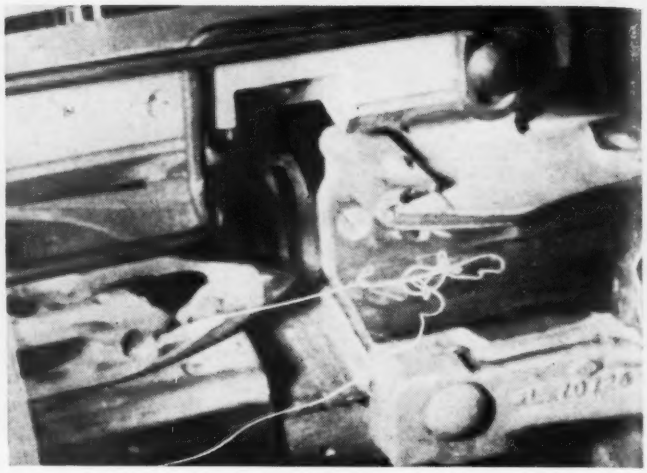
THEORY FIRST. Before the new operators were permitted to use the fork lift trucks, they met for a class session in which the director of training explained what the fork trucks were and what they were expected to do, and diagrammed some of the possibilities of correct warehousing. He also gave them instruction about the duties of an operator, such as the correct servicing of the trucks, and the care in operation expected of the operators. At this same session, the safety engineer gave a talk on safety and then showed the sound-slide film. After this session, the operators were taken to the practice area. At that time, the materials-handling engineer demonstrated to the trainees the use of the various levers to start and stop the truck and operate the lifting mechanism. The trainees were then permitted to use the trucks running empty. The first practice area was laid out on a seldom-used paved street in the plant yard. The trainees ran their trucks in and out of the spaces representing truck-van bodies, freight cars, and buildings; first with the truck forks empty, and, later, as they gained confidence and experience, with empty pallets carried on the forks. The trainees stacked and unstacked empty pallets and transported them from one area to another for practice sessions of approximately 1 hr. in length until they had completed 10 hr. of basic training in the practice area. Upon successful completion of this basic course, prospective operators operate "on the job" for an additional period of 50 to 150 hr. before being rated as thoroughly qualified operators.

When the second and third groups of trainees were brought in, they were given the same orientation instructions as those given the first group, but the practice area was changed. The second practice area was laid out in a building to obtain a smoother operating surface and instead of using pallets exclusively, the trainees were given bags, bales, and irregularly shaped objects to handle, since such loads represented 99% of the regular work planned for these operators. Thus, the course is tailored to the job. The results of the training program have been shown in the better warehousing of materials.

EXCELLENT RESULTS. Employees who have been thus trained and given power equipment with which to perform materials-handling operations that previously seemed commonplace and monotonous, have demonstrated a great pride in skillful operating. They show intense interest in finding better ways in which to use their trucks to the best advantage; such as filling warehouse areas with a minimum of waste space. Their safety record is excellent; none of the operators trained in these courses has had an accident.

Supervisors of various departments have shown great interest in the training program. They have visited practice areas and have attended the orientation sessions voluntarily in order to discover what and how the men are being taught, and to give their cooperation on any needed details in the training.





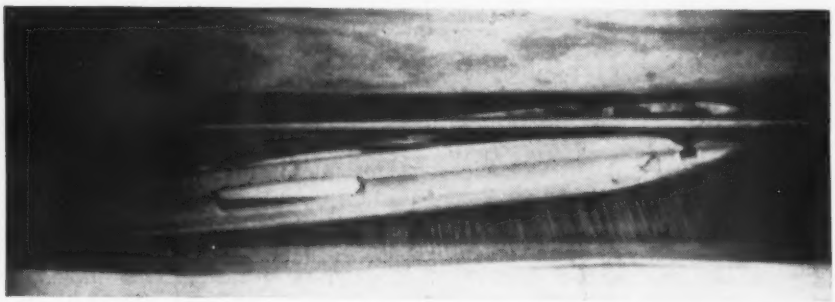
Lively filling *such as this can cause trouble in weaving (kinks, ropy filing, even broken picks). Proper conditioning can*

WILD FILLING Can

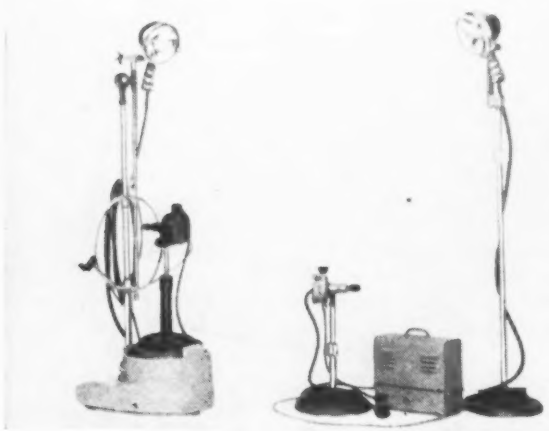
HIGHLIGHTS: *High-intensity stroboscopic flashes and dark glasses permit observation without darkening room—Improperly conditioned filling can be detected—Other moving parts can be viewed "stopped."*

A NEW TECHNIQUE for studying machinery and yarn in motion permits observations in fully lighted rooms, whereas at least partially darkened areas were formerly necessary. One very practical use for such observations, illustrated on these pages, is to find out if filling has been conditioned (set) properly. Many other uses, of course, suggest themselves, such as for determining loom settings.

With portable equipment shown, observations can be made in the mill without interfering with normal operations unduly. The flash can be controlled by a contactor connected to the loom crankshaft so that the flash is sure to occur at the same point in the cycle of operation, and a camera can be coupled to the equipment for recording observations whenever desired.

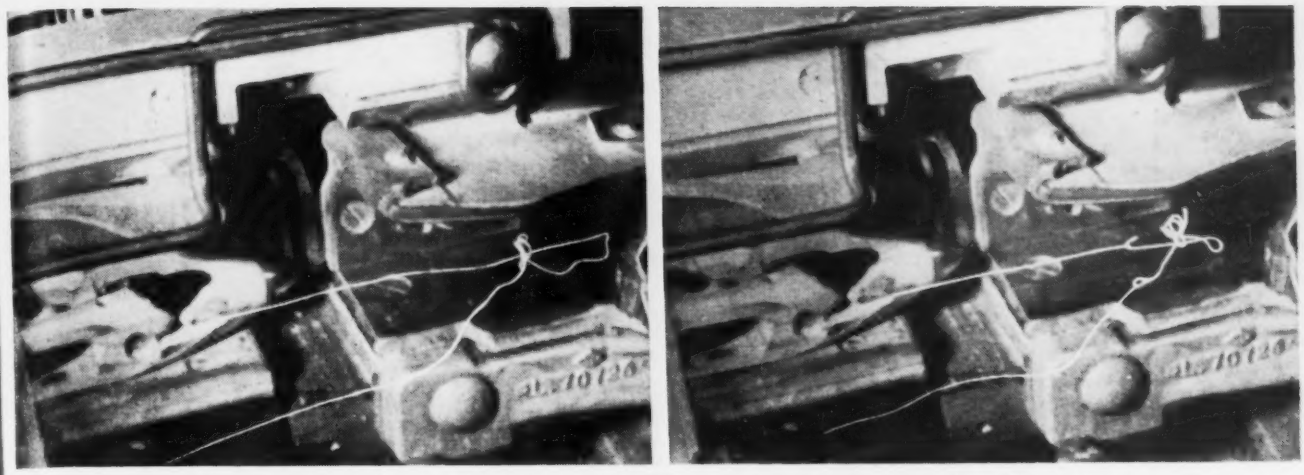


A wild shuttle *rather than wild filling was observed as the shuttle came out of the top shed and struck the handrail. Filling floats, or bang-offs, can occur when this happens. This is a rare photograph as shuttles flying out such as this are unpredictable.*



Strobolite equipment *used for the new technique of observation utilizes a high-intensity flash lasting 20 micro-seconds. Model at left is mounted on wheels for ease in moving.*

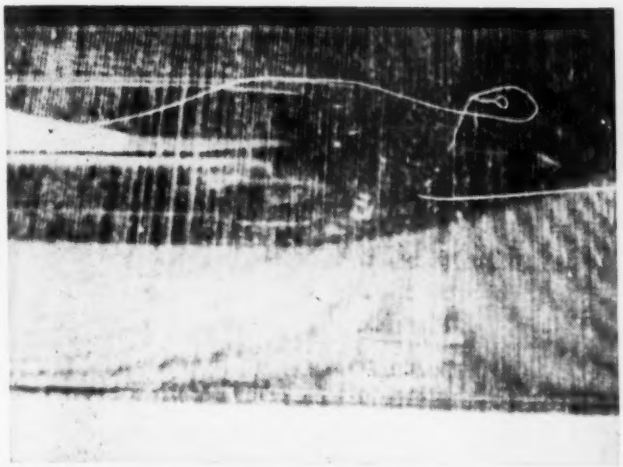
Observer uses dark glasses *— the room does not need to be darkened. In his right hand are the lamps; in his left, the knob controlling the contactor. Up to four lights can be used.*



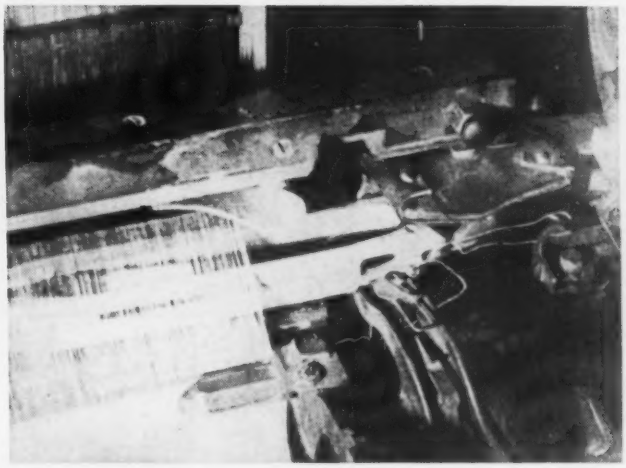
overcome the snarls shown. Photos illustrate four instances of wild filling occurring as shuttle leaves the right-hand box.

Be Easily Studied

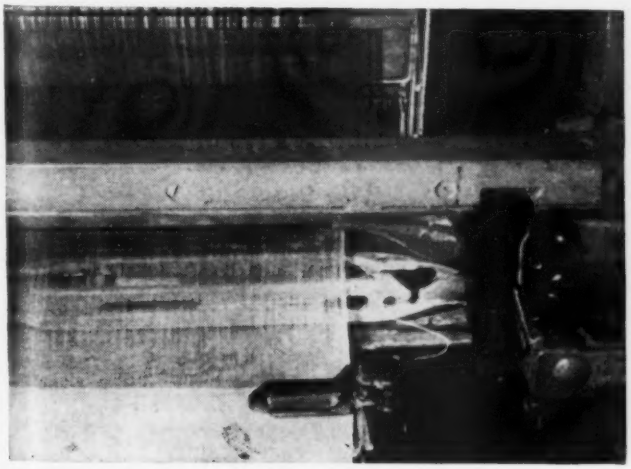
By C. D. BROWN
Textile Engineering Service, Inc.
Worcester, Mass.



***A bad loop** is thrown out of the shuttle eye and over the back wall of the shuttle. The filling might loop over the shuttle eye and break. This photo shows the shuttle passing through the shed.*

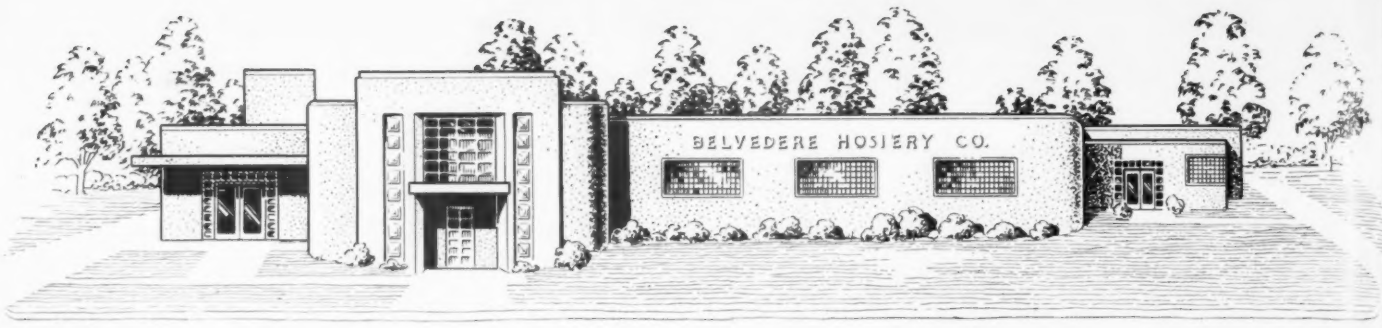


***Filling is caught** within the thread-cutter opening in the shuttle. If the shuttle is rough at this point the filling will probably break. (The yarn is also thrown over the back wall of the shuttle.)*

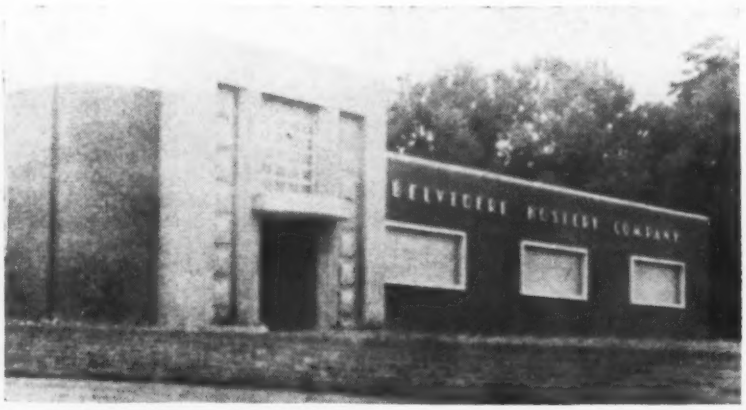


***Filling entangled** in the filling-feeler slot of the shuttle is likely to break just as it might when caught in the filling-cutter opening, as shown above.*

***Well-behaved filling** is shown here at the left side of a 2-box loom. This is how properly conditioned filling will usually look, whether on a box or a plain loom.*



BELVEDERE—*The House Built for FULL-FASHIONED Equipment*



The sketch of the Belvedere plant, *at top of page, and photographs of important structural details, reveal the modern low lines, the circular-rooted entrances, and the impressive front—all compelling factors in the attraction of high-type employees.*

While constructed with an attractive combination of materials, the three entrances serve a more important purpose than being merely decorative. Entry at left is for incoming supplies and yarn and for outgoing shipments of hosiery. Full-length, completely equipped knitting machines can also be admitted here. Belvedere's layout of departments is circular in effect, the product entering as raw material and leaving as finished hose from the same point.

The central front entrance leads to the general offices and the right entry is for employees. Cross currents of human traffic through the production departments are eliminated by these separate entrances.

The suspended, wing-type marquees over the entries are circular and have aluminum moldings. Door frames are of aluminum. Thermopane glass in the inner doors keeps refrigerated air in, hot air out. Elevators at the service entry serve the large basement which has storage space, machine shop, and engineering equipment.

HIGHLIGHTS: *Architecture and photo-electric traffic control cut production corners and improve layout efficiency of new full-fashioned mill at Charlotte, N. C.—New materials, and wing-type marquees feature the separate entrances for employees, supplies, and office personnel—Production equipment, all new, includes latest improvements in preboarding and boarding machines.*

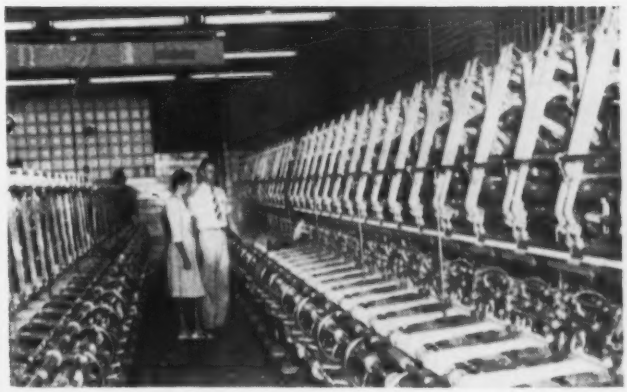
By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

LOW-ROOFED, SINGLE-STORY, and superbly equipped, Belvedere Hosiery Co. new mill, Charlotte, N. C., adapts the design and utility of a modern home to the problem of housing and locating the equipment required in the manufacture of full-fashioned hosiery. To obtain both an efficient and an attractive workplace for employees in a metropolitan area, J. Match Hatch, president of Belvedere, submitted the problem to Biberstein & Bowles, mill architects, Charlotte. The structure they designed has now been equipped with full-fashioned machinery. The balance obtained between efficient production and attractiveness in a full-fashioned plant is shown by the accompanying photographs.

New materials, plus an excellent use of older ones, determined the final result of the architects' efforts. There are no conventional windows. Because of the air conditioning, the window space is sealed with glass block. A liberal use of aluminum is noted in doors, frames, and moldings around

Belvedere plant refined in every detail

Jean Cherry moves a tray *of 51-gage 15-den. black-walnut nylons from the boarding room to the inspection-packing department. Four Stanley magic-eye doors, such as the above, permit the mill to seal off the varied atmospheric conditions required by the different departments and yet effect immediate access between them. Operator in background takes another tray of hose from the Paramount finish-boarding machine. Note the air-changer used in the boarding room, and the tile dado which is a feature throughout the entire mill.*



Theodore Hillon, *superintendent of Belvedere, inspects the new Karl Lieberknecht full-fashioned machines which knit Belvedere's specialty, a 15-den. nylon hose. The machine has 32 sections, automatic welt turners, and Reliance variable-speed drive. The knitting alley is surfaced with ceramic tile; but main floors of the knitting room and all other departments are covered with asphalt tile, except for the concrete dyehouse floor. Knitting room is equipped with 100-watt fluorescent lamps, but PC glass block provides supplementary light. The air-conditioning ducts, constructed by the A. Z. Price Co., Charlotte, when metals were scarce, are made of asbestos board instead of sheet metal.*

the circular marquees shielding the entrances. The front entrance is veneered with terra-cotta tile. The main structure is of brick and poured concrete.

From the standpoints of both equipment and layout, the Belvedere mill is one of the most modern in the industry, as will be seen from these photographic highlights.

Photos by Mel Bowden, Southern Editor, TEXTILE WORLD

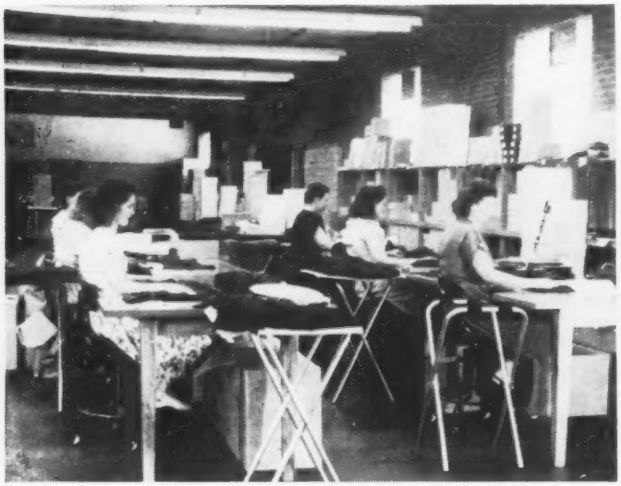
Operative fits hose *on the form of Proctor & Schwartz's new preboarding machine. Two operators usually work together on this machine. Stockings are fitted on the 30 forms with no walking on the part of the operators since the forms are rotated by the turntable. When forms are full, operator moves lever; the forms swing inward, and the chamber drops over them. After 1 min. and 50 sec. in a 220° F. temperature, hose are preboarded to shape. The chamber then rises automatically; and a metal ring pushes the forms outward where they take the original, boarding position shown above. Should a form be out of line when the chamber comes down, a safety device operates and stops the chamber, thus preventing damage to the hose and to the machine.*

One of the latest *of the machine models found in the new mill is the Paramount finish-boarding machine, shown here being operated by Betty Williams. The new Paramount model has 12 forms and employs a selective or rotating control to actuate the supply of forms thrown back to the operator. Operation of forms is in a regular sequence controlled by pressure of the knee against the bar located at the base of the forms. This bar operates a solenoid which engages the clutch to the gear mechanism driving the form rotation. From ½ to 2 lb. of steam is carried in each form, depending upon the type of hose and denier being processed.*

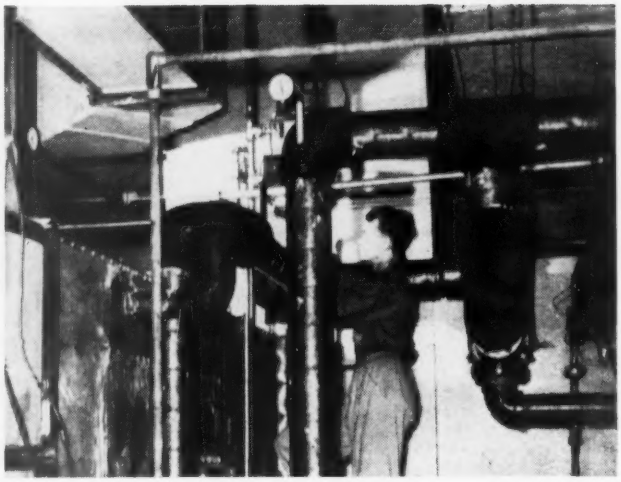
The Ammons inspection-form machine *is used for gray-goods inspection in the inspection-looping-seaming department. Nearby are the Singer seamers, and the Sotco loopers.*

Belvedere pictures continued on next page ➔

Modern engineering aids production and personnel

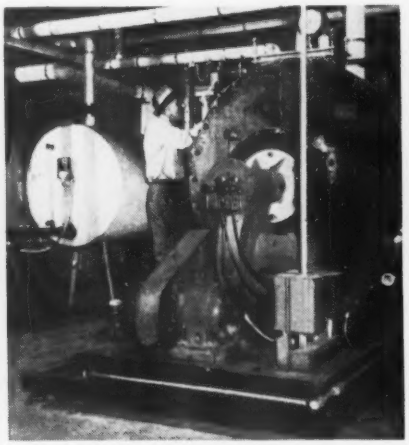


Inspection and pairing *of 15-den. nylon hose are shown here. Each operator has a light-weight, metal table to hold the plastic trays delivered from the boarding department. After pairing, the hosiery is processed on the transfer iron (not shown) and then folded, wrapped, and packed on the tables in the background. As in the knitting, seaming, and looping departments, fluorescent lights have 100-watt lamps, differing from 40-watt fluorescent type in the general office, and the 40-watt incandescent lights in the dyehouse.*

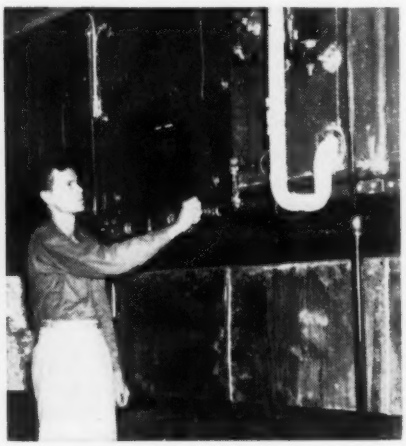


In the air-washer room, *R. J. James checks the pneumatic valve on the water intake line. Control devices greatly reduce Belvedere's task of maintenance. By locating the greater part of its engineering and maintenance equipment in the large basement or in adjacent buildings, Belvedere leaves proportionately more floor space for production equipment. Similar Minneapolis-Honeywell controls to the one shown in the washer room are located in other parts of the air-conditioning system.*

Dyehouse Foreman *J. R. Armstrong, of Belvedere, inspects the Foxboro temperature controls on the Smith-Drum rotary dyer. Mr. Armstrong uses the split-bath method of dyeing nylon hose and has equipped his new machines with drains built in the floor and new Louis-Allis splash-proof motors which power the chain drives of these rotary machines.*

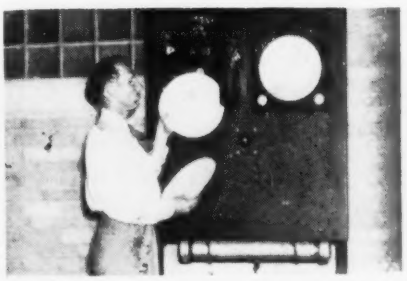


Belvedere's night watchman, *standing between the steam-condensate drain-tank (left rear) and the boiler, punches his clock (one of the few manual operations in this room). The Cleaver-Brooks boiler is oil-fired and fully automatic; and two are used with pressures of 100 and 125 lb., respectively. Motor in foreground powers the American Blower Co. blower and the oil-feed pump.*

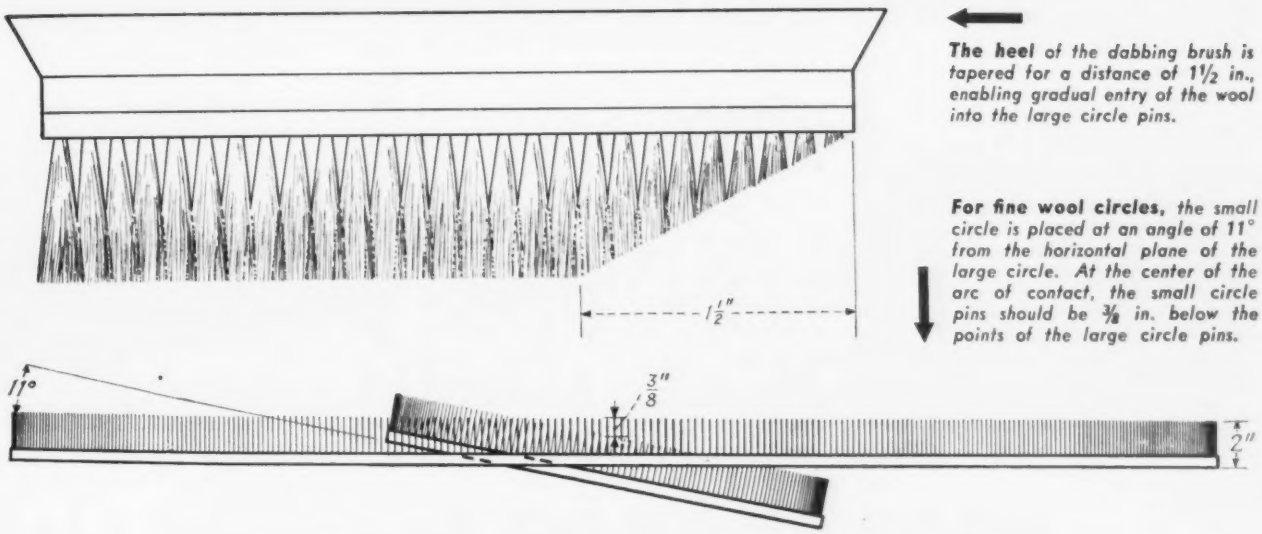


The steam intake line *to the air-conditioning radiation is pointed out by R. L. James, Belvedere's master mechanic. When cooling is required, Freon also enters this unit, liquefied by two 15-hp. and two 20-hp. General Electric compressors.*

Belvedere's superintendent, *Ted Hillon, lives in this well-built, brick home near the mill building.*



Mal Bowden, *Southern editor, TEXTILE WORLD, uses remote control to catch picture showing him inspecting humidity and temperature charts of Belvedere's knitting room. The charts are from the Brown recording control-panel.*



The heel *of the dabbing brush is tapered for a distance of 1½ in., enabling gradual entry of the wool into the large circle pins.*

For fine wool circles, *the small circle is placed at an angle of 11° from the horizontal plane of the large circle. At the center of the arc of contact, the small circle pins should be ⅜ in. below the points of the large circle pins.*

Brush Cost Lowered by COMB MODIFICATION

HIGHLIGHTS: *Brush dabs into large circle only—Wool placed in small-circle pins as result of setting circle at angle—Use of stationary knives made possible.*

By T. F. GRIFFIN*

EXCESSIVE WEAR of dabbing brushes on the Noble comb has been eliminated by a recent invention developed in a laboratory of the University of Leeds, Leeds, England. The development involves a modification of comb construction in conjunction with a different method of dabbing the wool into the pins.

In the new method, the wool is inserted into the pins in two stages, first into the large circle, and later into the small circle. Thus the necessity of dabbing into both circles simultaneously is eliminated.

Entry of the wool into the pins of the large circle is accomplished gradually by tapering the bristles in the leading end of the dabbing brush. This gradual entry of the wool into the pins places less strain on the bristles than when the wool is dabbed to full depth in one stroke of the brush. The tapered end of the brush increases the section of bristles used to dab the wool to its correct depth from ½ in. in the case of the ordinary Noble comb to 1½ in., the length of the tapered part of the brush used in the new method.

The fringe of uncombed fibers protruding from the inside row of pins intermesh with the small circle pins because the small circle is set at an angle so that the pins of the two circles cross each other instead of being in the same place. The smallest pin circle must also be set so that the points of its pins are below the points of the large circle pins at the arc of contact.

With the small circle set in this manner, the fringe of wool comes into contact with the small circle pins at the beginning of the arc of contact, and the fringe can pass the small circle only by pulling through its pins. The wool does not require dabbing into the small circle at all.

SMALL-CIRCLE ANGLE. For fine wool circles, satisfactory results have been obtained by setting the small circle at an angle of 11°. The greater the angle, the easier the fringe enters the pins; but if the angle is too great the wool is pulled too low into the pins of the small circle, and at the same time wool in the large circle pins is lifted out as the two circles separate. As a precautionary measure, a support knife is used for the wool in the small circle; and a holding down knife is used for the wool in the large circle. The support knife conforms to the contour of the small circle, and is placed outside the circle so that fibers protruding from the small circle are supported. The holding-down knife is placed between the two circles 5 in. past the arc of contact.

The distance that the points of the pins of the small circle are below those in the large circle is influenced by the angle at which the small circle is set. With an angle of 11°, the distance is ⅜ in. at the center of the arc of contact. To prevent the fringe from touching the pins too soon, a small cover plate is placed over the pins at the point where the wool enters the pins. The wool must not touch the pins of the small circle until the beginning of the arc of contact is reached.

The tapered brush should be set so that the end of the tapered part, the point at which the bristles reach their full length, is placed opposite the arc of contact. The part of the brush extending behind the arc of contact helps prevent the wool from rising out of the pins as the two circles separate.

With the new method of dabbing, stationary knives which press the wool into the pins may be used successfully. Good results have been obtained by using one knife in conjunction with the dabbing brush. The knife is placed between the two outside rows of pins in the large circle and penetrates to a distance of ¼ in. The brush is used to dab into the other rows. When using the knife, the second inside row of pins may be removed from the larger circle. This permits the use of a stronger knife and removes the possibility of the knife damaging the pins. When a knife is used, the bristles of

(Continued on page 209)

* Condensed from *Textile Manufacturer*, Manchester, England, July, 1947.

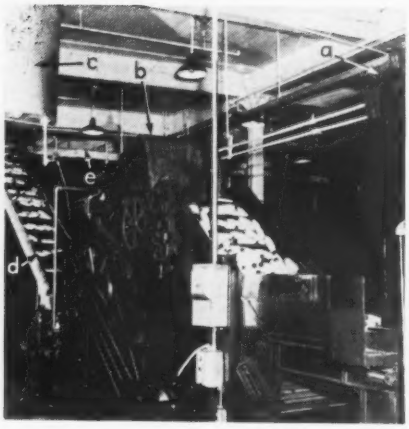


***Fig. 1A. Yarn box a** is lifted into position by a pneumatic hoist to dump warp spinning yarn onto the feed apron of conditioning machine **b**. Suspended tank **c** supplies fluid to the machine. Inclined conveyor **d** receives yarn from the machine and carries it to overhead horizontal conveyor **e**.*

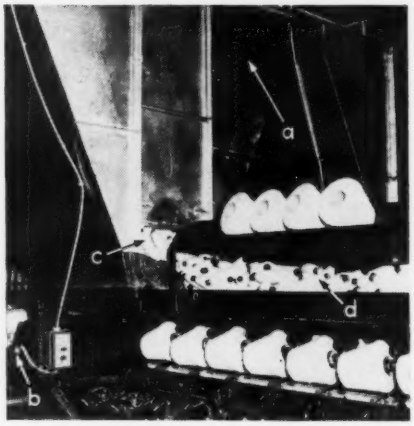


***Fig. 1B. Yarn carried along** on the horizontal conveyor is dropped into hopper **a** at one end of a Foster winder, comes out of the hopper through door **c**, and is distributed along the creel as shown at **d**. The creel-board belt, driven by motor **b**, is timed so that a good supply of yarn is placed along the creel. A diagrammatic view of the entire conditioning-handling system is shown on the opposite page.*

MATERIALS HANDLING

***HIGHLIGHTS:** A creel of yarn is laid on a Foster winder in 45 sec. at Avondale Mills' Sycamore, Ala., plant — A "homemade" brine-conversion system saves 120 to 180 tons of salt a year — A coal-silo system unloads and and stores 20 tons of coal per hr.*

By P. M. THOMAS, *Associate Editor, TEXTILE WORLD*

SIGNIFICANT GAINS in eliminating labor exertion, bottlenecks, and waste of materials have been made at Avondale Mills, Sylacauga, Ala., by applying modern engineering methods to conventional ways of doing work. The materials-handling program now under way [TEXTILE WORLD, December, 1946, page 118] is being steadily broadened, and late installations include means for storing and conveying a variety of materials ranging from empty spinning bobbins to coal and processing salt.

A method of mechanically laying up yarn on the creels of Foster winders in the Sycamore, Ala., mill is one of the installations lately put into use. This installation accomplishes in 45 sec. the same amount of work formerly done by hand by one operator in 15 min.

In the winder room at the Sycamore mill, there are 13 Foster winders. Before the installation shown in Fig. 1 was put into use, four yarn men and one conditioning-machine man were required to truck the boxes of yarn from the incoming-storage area, condition it, truck it to the winders, lay it up, take down the empty bobbins, and truck them to the outgoing-storage area. By the use of the conveying and storage system worked out at the mill, all of this work is now done by two yarn men and one conditioning-machine man. Thus, a labor saving of 40% is realized at this process.

HANDLING SYSTEM. The yarn-handling installation works as follows: A box of warp yarn received from the spinning room, located on the same floor as the winder room (background in Fig. 1A), is pushed into position to be clamped by a pneumatic hoist. When the switch is thrown, the hoist raises the box of yarn into position a, dumping the yarn onto the feed apron of conditioning machine *b*. Conditioning fluid from storage tank c, suspended from the ceiling, is sprayed over the yarn.

Conditioned yarn from the machine is dropped onto inclined conveyor *d*, which carries it to horizontal conveyor e. Conveyor e is suspended from the ceiling and extends across the room over the ends of the winders.

At each winder there is a sheet-metal storage hopper, a in Fig. 1B; and directly over each hopper is a swing gate controlled manually by pulling a cord to open or close it. By closing the swing gate, yarn is prevented from continuing along the horizontal conveyor and is guided into the hopper.

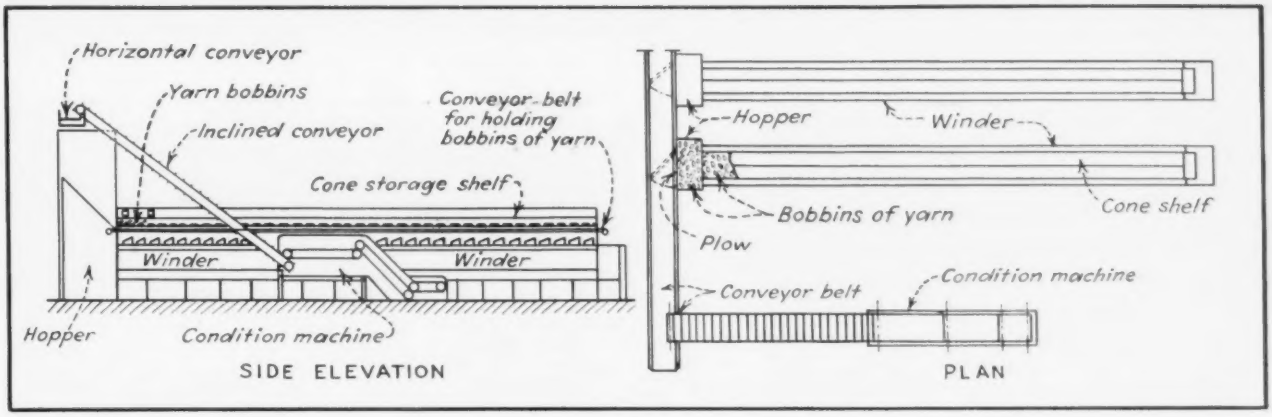
By this arrangement, a box of yarn can be directed to any of the 13 winders, making it possible to use the installation with any number of different yarns that the winders will accommodate. The only limitation would be that a whole winder must be on one yarn number or the different yarn numbers must be so marked that they are readily identifiable by the winder operators.

STORAGE HOPPER. The yarn is stored in hopper a until it is needed on the creel of the winder. The conventional creel board of the winder was replaced by a belt conveyor, driven by motor *b*, that travels away from the chute. To refill the creel, an operator throws a switch at the end of the winder opposite the chute. Motor *b* starts the creel-board conveyor moving slowly toward the other end of the winder. Yarn is fed from gate c onto the conveyor. The conveyor is timed so that a good supply of yarn is made available to the operators over the entire length of the winder, as at *d*.

At the opposite end of the conveyor, a yarn stop is placed across the conveyor path to obstruct the passage of scattered bobbins of yarn that may remain on the creel. Thus, it is not necessary to clear the creel entirely before renewing the yarn supply.

In working out the system, Sycamore found that some provision had to be made to aid the feeding of yarn through door c. The tendency was for the yarn to pack in the lower end of the hopper and be held there by the weight of the yarn in the upper part of the hopper. This difficulty was solved by placing an off-center drive roll near the end of the conveyor directly under the yarn chute. The practical value of this off-center roll is that it gives the yarn a slight jolt — the equivalent of a mild vibration — to prevent it from lodging and packing. An even feed from the chute door was obtained.

Another method of storing and han-



Offers Opportunities to Save

dling sales yarn between the spinning frame and winder is used at Catherine Mill, Sylacauga, Ala. This system, not employing an automatic winder-creel feed, consists in removing yarn from the spinning room, storing it in an area not needed for production work, conditioning it, and returning it to a point convenient for supplying the winding machines.

The spinning frames and winders in this mill are located on the first floor of the mill and are adjacent to each other in a single room. Yarn from the 107 warp frames formerly was pushed to a conditioning machine located in an open area between the frames and winders. This area served for storage of boxes of conditioned and unconditioned yarn and was frequently congested.

FREEING CONGESTED AREA. Nine bins, to accommodate as many as nine different numbers of yarn, were built in a basement area directly beneath the yarn-delivery area at the end of the

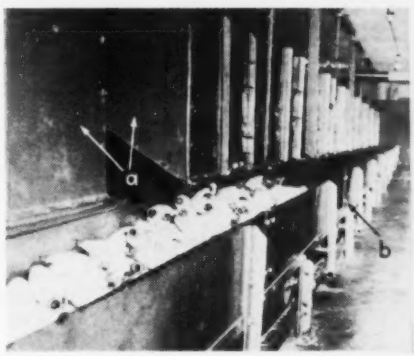
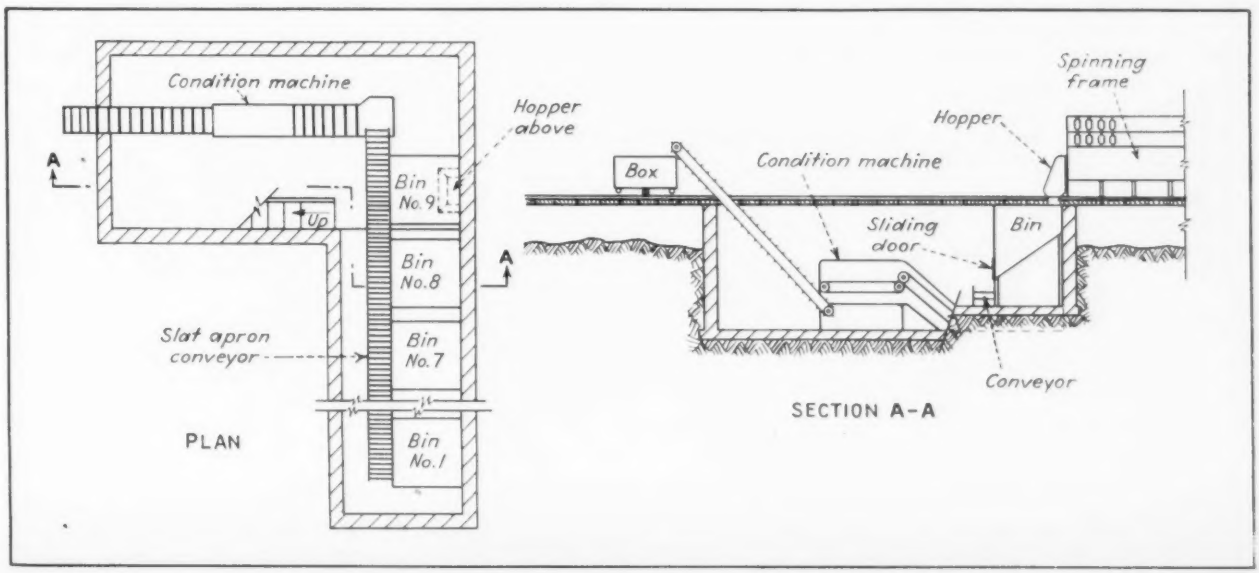
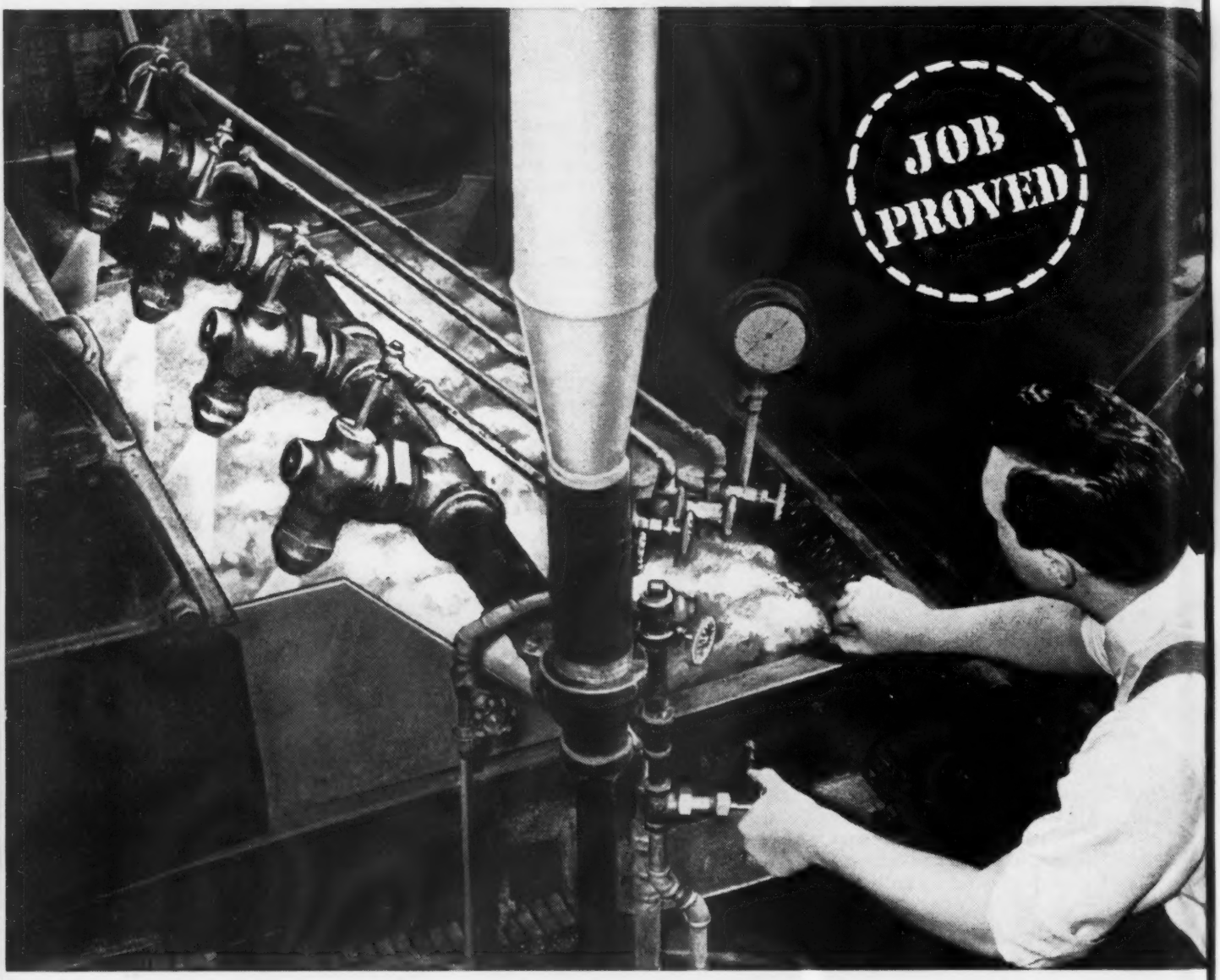


***Fig. 2A. Nine storage bins a** were built in a basement area directly below dumping chutes located at the ends of spinning frames on the floor above in order to eliminate spare-floor congestion. Horizontal conveyor **b** extends over the feed apron of a conditioning machine. Spinning doffers dump their yarn in the proper hopper on the spinning-room level, and the yarn is stored in these bins until it is needed by the conditioning-machine operator. The operator then raises the door of the bin containing the number of yarn he needs, and the yarn pours onto conveyor **b**.*

***Fig. 2B. The yarn from conveyor b** is emptied onto the conditioning-machine feed apron and is carried into the machine, as shown at **c**. After it has been conditioned, it is dropped onto an inclined conveyor and returned to the spare floor near the winders on the floor above. Delivery of yarn is controlled from an upstairs push-button switch.*





SUN TEXTILE PROCESSING AID . . .

Recommended by Eastern worsted manufacturer, who says, "I have never used a better product."

An Eastern worsted manufacturer was paying a premium price for a well-known type of processing oil, but found the wool hard to process and the yield disappointing.

He brought this problem to a Sun Engineer, who recommended Sunotex, a Sun wool-processing oil which is used in dozens of woolen mills. This "Job Proved" product was put to work and scoured out evenly and quickly. Its use resulted in much cleaner wool and better-conditioned yarn.

A saving of $2,000 a year was also realized, because of the difference in price between the Sun product and the oil formerly used.

"I have never used a better product for processing worsted stock," says the owner of the mill, after four years' experience with Sunotex.

More and more textile engineers are using Sun "Job Proved" processing aids and lubricants and getting results like those described above. If you are interested in the "Job Proved" Sun products that will help you produce more for less, write Department TI1.

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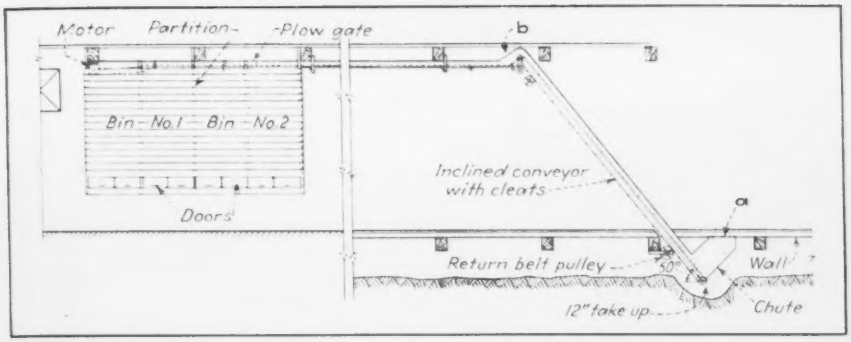

***Fig. 3A. Empty spinning bobbins** thrown out by the winders and returned to the ends are dropped into open-bottom quill cans and guided onto conveyor **a**, which runs beneath the floor at the ends of the winders. This conveyor passes through a wall and delivers the bobbins to a chute, which feeds them to a cleated inclined conveyor. The inclined conveyor empties the bobbins onto a horizontal conveyor at point **b**, which delivers them to the two storage bins. The floor length covered by the inclined and horizontal conveyors is 120 ft.*

***Fig. 3B. A lift door** for removing bobbins is located at the bottom of each of the two bins. The bins are located in the lengthwise center of the spinning room so that they are convenient for all the doffers.*

spinning section. These bins, a in Fig. 2A, extend to the under side of the spinning-room floor, as shown in the sketch. On the spinning-room level above, hoppers for dumping yarn into the storage bins were built. Instead of storing unconditioned yarn in boxes in the open area between the spinning frames and winders, the yarn is now dumped into the hoppers and stored in the bins in the basement area.

Each bin is built with a slanting bottom and a sliding door so that yarn can be removed from the bin by raising the door. In front and below the bins is located horizontal belt conveyor b, which feeds the yarn to the apron of the conditioning machine, as shown in Fig. 2B. From the conditioning machine, the yarn is dropped onto an inclined conveyor, shown in the sketch,

***Fig. 4A. Brine conversion and storage** are accomplished in this brick house formerly used by the Birmingham mill for storing salt. Salt from the railway car on the elevated siding, background, is dumped into the storage area through two hatches in the roof. Water is permitted to flow over the salt, converting it to brine.*

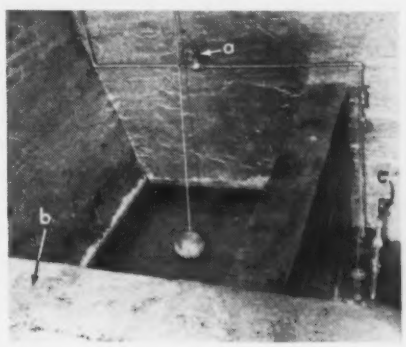

***Fig. 4B. Leakproof floor and walls** are used in the brine tank. Cut-off valve **a**, actuated by the float on top of the brine, controls the flow of water to the salt. This float and valve are set to maintain a 22-inch brine level. Meter **c** in the pipeline to the mill indicates the flow of brine to the processing machines.*

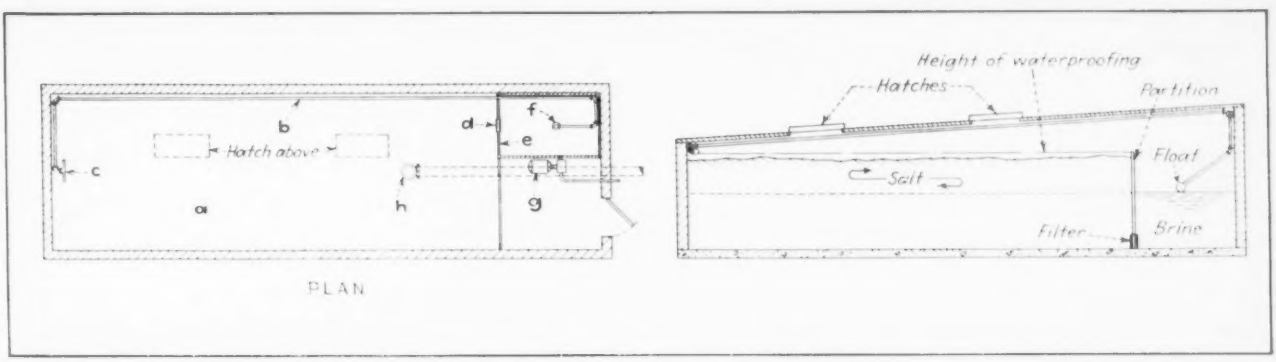

***Fig. 4C. The salt-storage and brine-conversion area** is indicated at **a** in the plan view. Salt unloaded from the car is dropped into this area, and water from pipe **b** is permitted to flow over the salt in two directions at outlet **c**. At the base of the partition between area **a** and brine tank **e**, an opening covered on either side of the partition with perforated stainless-steel plates filters the brine as it flows from **a** to **e**. Float **f**, shown in **4B**, actuates a valve in water line **b** to stop the flow of water at **c** when the brine reaches a level of 22 in. (approximately 2,100 gal.) Motor and pump **g** force the brine to the mill as it is needed for processing.*

*When a supply of salt has been exhausted, drain plug **h** is removed and all impurities in the storage area and tank are flushed through a 6-in. drain pipe to a sewer.*

The use of this brine-conversion system has reduced the amount of salt used from three or four cars a year to about one car (60 tons). Practically no labor is involved under this new system.

Tough on our production line —but fine for yours

We can't keep our engineers out of the laboratory. They studied this cylinder drying machine and said: "Let's try a chain drive"—tough on our production line but fine for yours. The results in quieter operation and higher speeds are a matter of record. Individual stacks can be driven by individual motors, resulting in more accurate control of tensions between dry cans.

There's no "dead wood" in the Butterworth line. Single machine or complete range, Butterworth equipment is designed to give increased yardages at lower cost.

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which carries it back upstairs and dumps it into a box. Delivery of the yarn is controlled from the upstairs delivery point by means of a push-button switch. The box of conditioned yarn is stored on the spare floor near the winders until it is ready to be laid up. This installation has not only reduced the labor formerly required for handling yarn, but has also contributed materially to the better use of production floor space.

An arrangement for conveying and storing empty bobbins from the winders is now in use in Central Mill, Sylacauga, Ala. This method eliminates congestion and reduces pushing boxes of empty bobbins and handling bobbins.

In most winder installations, empty bobbins from the winder spindles are dropped onto a belt conveyor beneath the machine and are conveyed to one end of the winder and discharged into a box set at the end of the winder. At Central Mill, a hole was cut in the floor at the bobbin-discharge end of the winder and a quill box with a slanting, open bottom was set over the hole. Beneath the floor, a horizontal belt conveyor was installed so that it runs directly beneath the quill can at the end of each winder. Empty bobbins discharged by the winders fall through the quill cans onto the horizontal conveyor.

EMPTY WINDER BOBBINS. At the discharge end of this conveyor, *a* in Fig. 3A, the bobbins fall into a chute and are fed onto an inclined conveyor. The inclined conveyor empties onto a horizontal conveyor at point *b*. The purpose of the inclined conveyor is to raise the bobbins to a level to drop them into the tops of the storage bins. A gate above each bin can be closed to cause the bobbins to fall into the bin desired.

Bobbins from nine winders are stored in these bins. The bins are located in a narrow storage room in approximately the lengthwise center of the spinning room, which is on the same floor as the winders. This arrangement places the storage bins in a location convenient to all the spinning-frame doffers.

A brine-handling system that not only has eliminated the labor formerly connected with handling processing salt, but also has netted a substantial saving in the amount of salt used, is in use at Avondale Mill, Birmingham, Ala. Before the system was installed, the mill used from three to four cars of salt a year – the equivalent of 180 to 240 tons. Now, for approximately the same amount and types of processing, the mill uses about one car, or 60 tons, of salt a year.

The house formerly used for storing salt was built of brick and had a concrete floor, Fig. 4A. The floor and lower part of the inside walls were made waterproof, and two partitions were built to provide separate storage spaces for salt and brine. An elevated railway siding permits a car of salt to be placed in position so that it can be unloaded through two hatches built in the roof of the house.

SALT TO BRINE. Salt dumped through the hatches falls into the salt-storage area; and water is permitted to flow over the salt, converting the salt to brine. This brine flows into a brine tank, from which it is pumped to the mill. A float valve in the brine tank

(Continued on page 234)

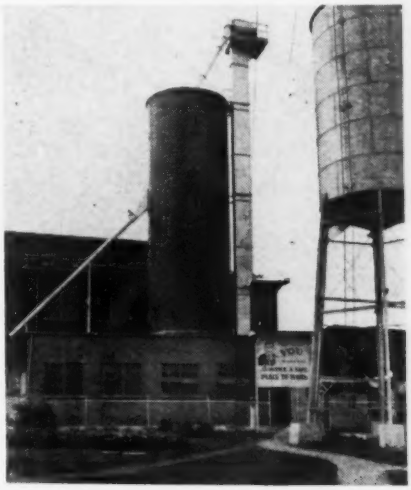


***Fig. 5A. Sufficient coal-storage space,** as well as better handling and feeding, has been obtained at the Birmingham mill by the installation of a coal-silo system for storing coal and feeding boiler furnaces. This silo is 50 ft. high and 16 ft. in diameter. It has a capacity of 200 tons of coal.*

***Fig. 5B. Coal from the railway car** is dumped into this chute and fed to a 28-ft. feeder conveyor. Approximately 20 tons of coal per hr. can be unloaded and stored.*

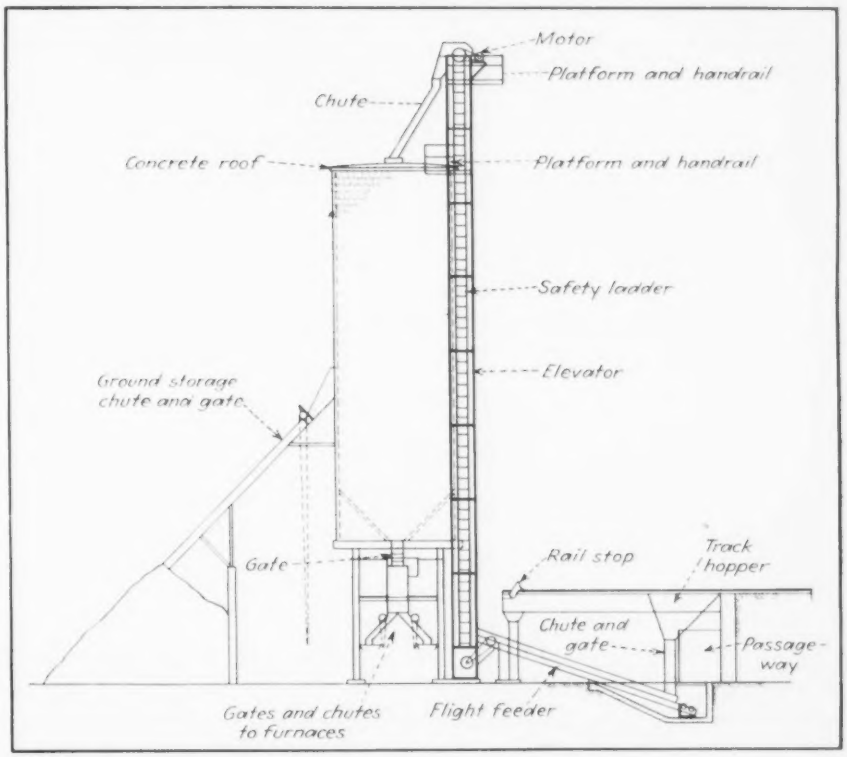
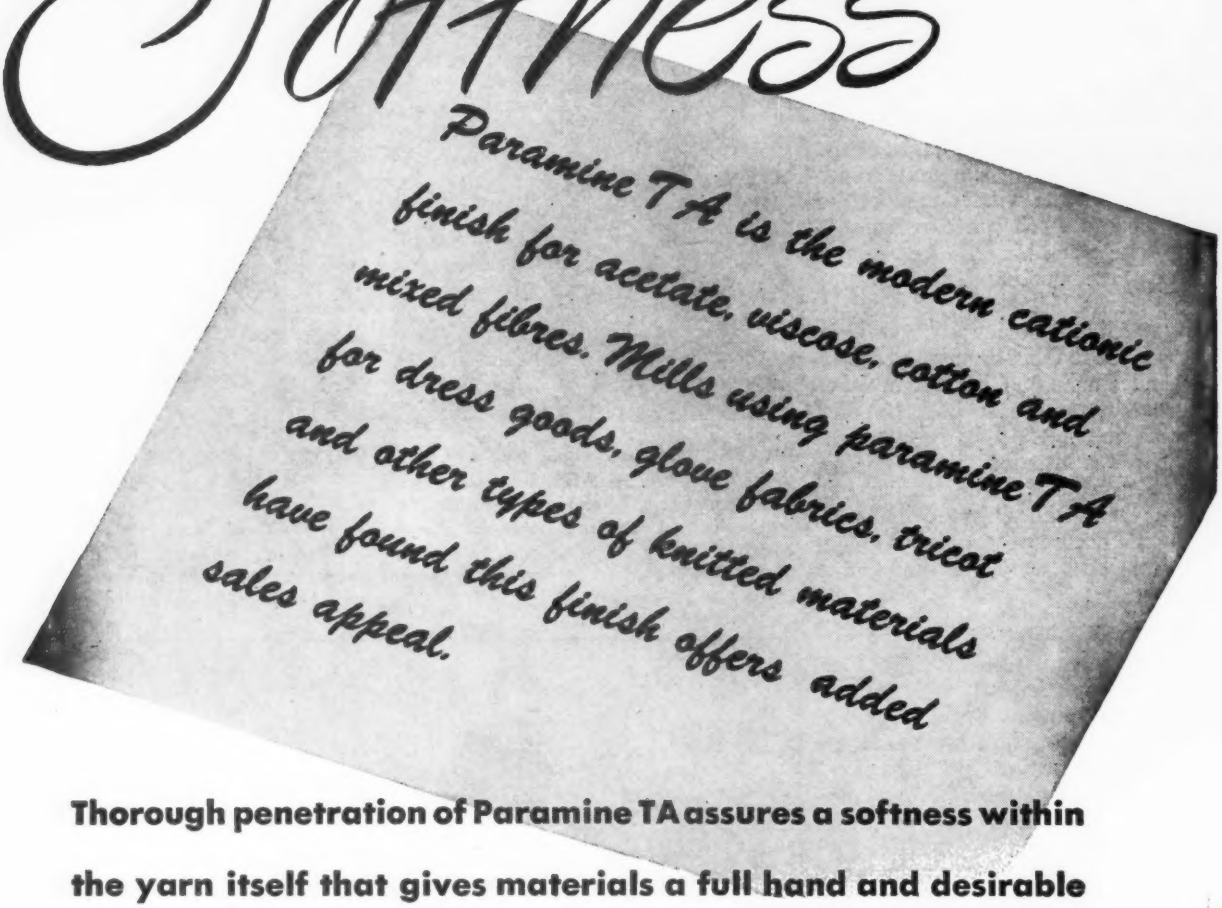


***Fig. 5C. From the track hopper** at the right, coal drops onto the flight feeder and is conveyed to the 83-ft. bucket elevator, which carries it to the top of the silo and dumps it. When the silo is filled, a limit switch stops the elevator. Excess coal is discharged to the storage pile on the ground, to be returned to the elevator when needed by a horizontal return conveyor, not indicated. Beneath the silo are shown the gates and chutes that control the flow of coal to the two boiler-feed pulverizers.*

The mill estimates that the system will pay for itself in two years.

IF YOU WANT

DURABLE *Softness*


Paramine TA is the modern cationic
finish for acetate, viscose, cotton and
mixed fibres. Mills using paramine TA
for dress goods, glove fabrics, tricot
and other types of knitted materials
have found this finish offers added
sales appeal.

Thorough penetration of Paramine TA assures a softness within the yarn itself that gives materials a full hand and desirable drape—its substantive action produces a durable, lasting finish

—Application is simple.

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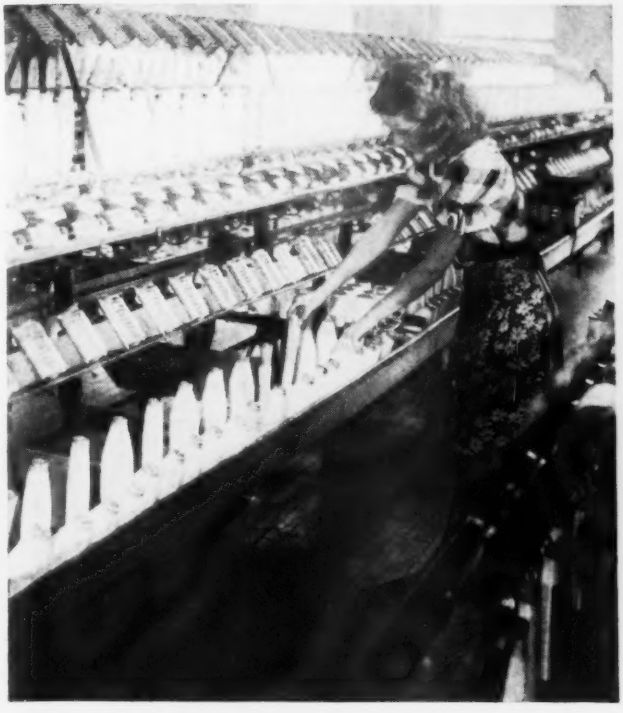


Supplies of pirns *are at the finger tips of winder Julia Magniarini. She has to walk no more than 8 ft. to reach boards of take-up spools.*

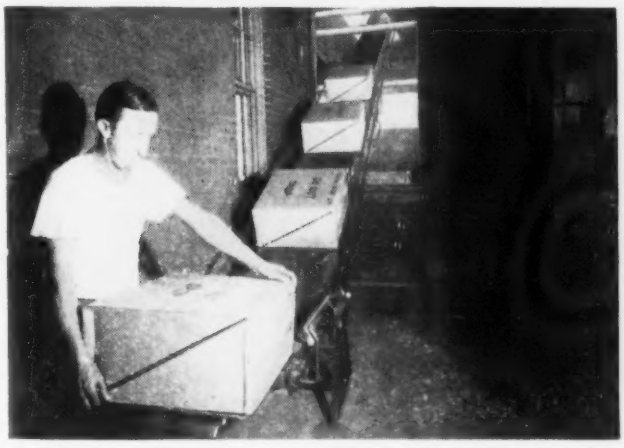
Only coning—*no throwing—is needed for 15-den. nylon monofilament. The key here is the emulsion being examined by Charles James, mill A plant manager. It permits superior cones to be wound. Striped cones are used to help knitter tell when yarn is about to run out.*

THROWING PLANT Has Many-Sided Program

HIGHLIGHTS: *Martin Fabrics Corp. adds materials-handling facilities, expands incentive system, and uses triple check on yarn identification—Is set up to run great variety of yarns, yet has special emphasis on hosiery yarn—Much experimental work being done.*

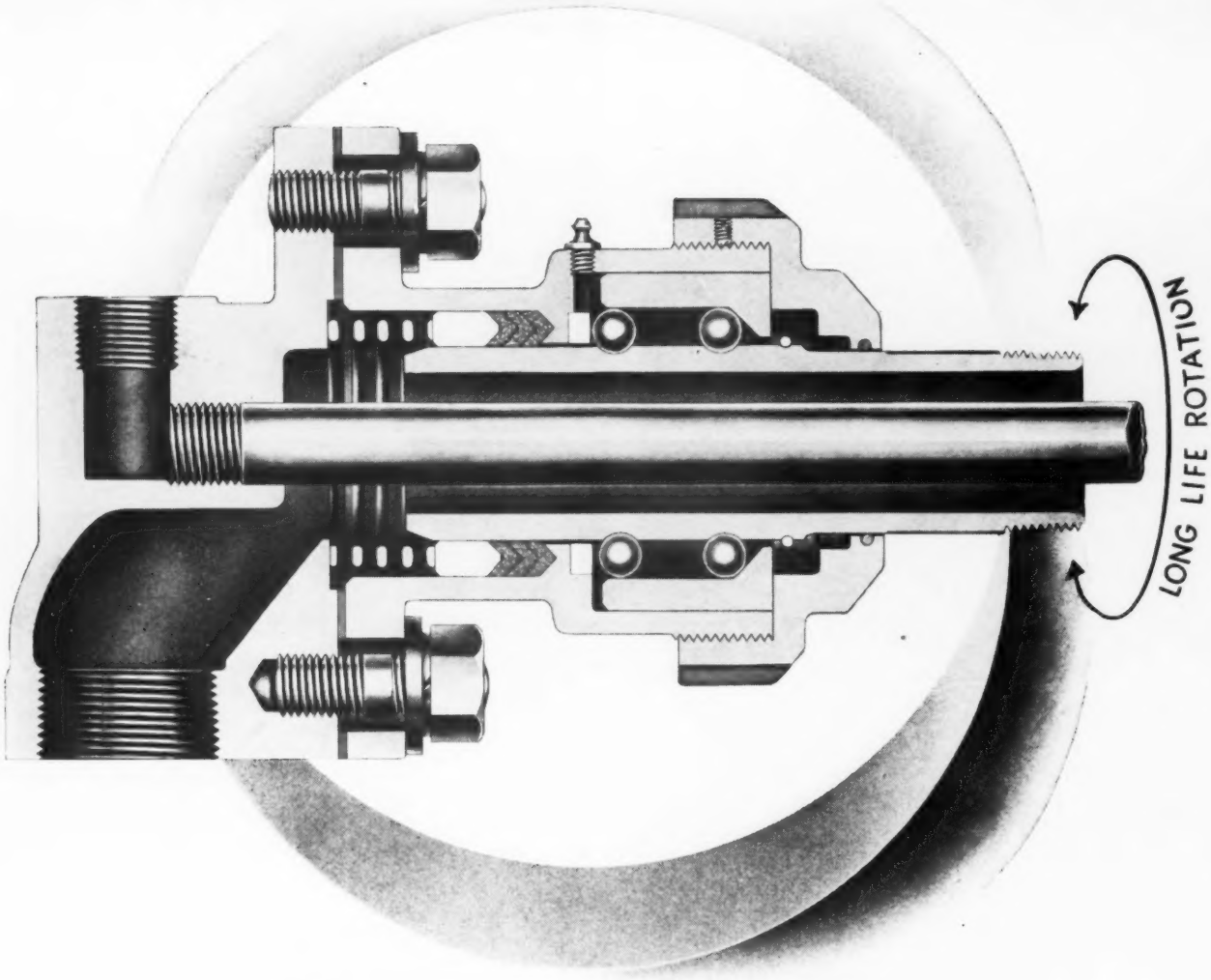
By C. W. BENDIGO, *Editor, TEXTILE WORLD*

A MANY-SIDED PROGRAM being carried out at the Bethlehem, Pa., throwing plants of Martin Fabrics Corp. (formerly Concordia - Gallia Corp.), includes installing materials-handing equipment, introducing new incentive methods of payment, changing over to larger packages, continuing a relatively fool-proof yarn-identifica-



Incoming cases of nylon *can be conveyed to the second floor after being taken from storage, as John Clement is doing here; or a portable roller conveyor can be extended into an incoming truck and cases sent immediately to the floor above.*

Ease in changing the roller sections *of the conveyor is demonstrated here by Floyd Rothrock, mechanic, to E. J. Carroll, superintendent of mill B.*



Reducing Diet

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The Barco revolving joint is specifically designed for the textile industry . . . for slashers, calenders, sanforizers and dry cans. Guards against steam leaks and wearing friction. Reduces power loss because of its lower turning torque. Barco's record of installations in textile weaving and finishing plants or bleacheries has been particularly successful. For further information write Barco Manufacturing Company, Not Inc., 1834 Winnemac Avenue, Chicago 40, Illinois.

BARCO ***FLEXIBLE JOINTS***

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

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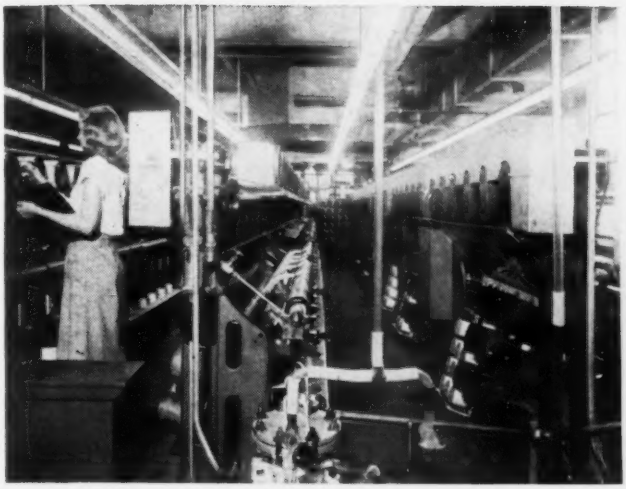
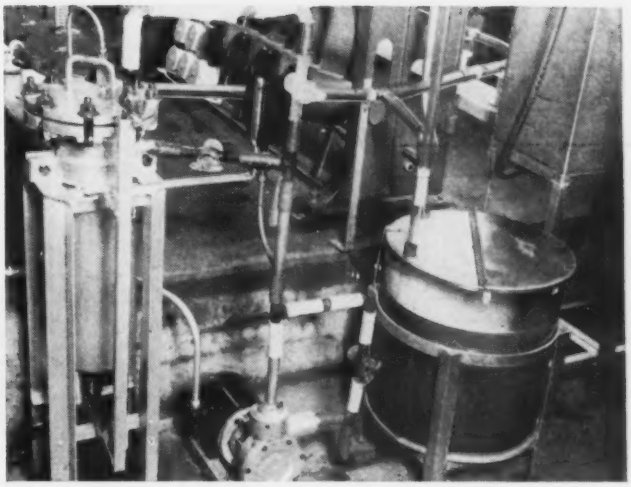
Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.

"MOVE IN EVERY DIRECTION"

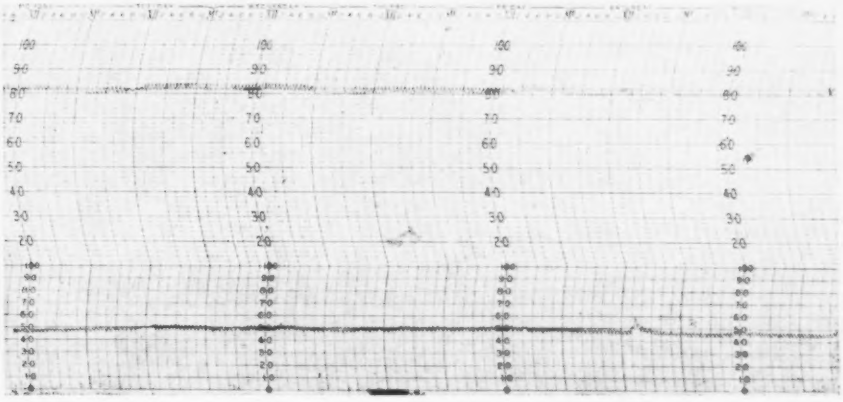


Machine arrangement *for this nylon-sizing room differs from the usual back-to-back. The back of one machine is used to store supplies for the next. Mazie Green, shown here, is making machine-speed tests for the mills' resident engineer.*



A recessed floor *is a feature of the sizing room. It permits the size to drop 18 in. into storage before being filtered and recirculated. Piping is mostly glass. Entire system is cleaned out weekly. Note detail of mounting machines (explained in text).*

Viscosity tests *made by Paul V. Hartman, engineer of tests, are being translated from Brookfield test to Soybolt figure.*



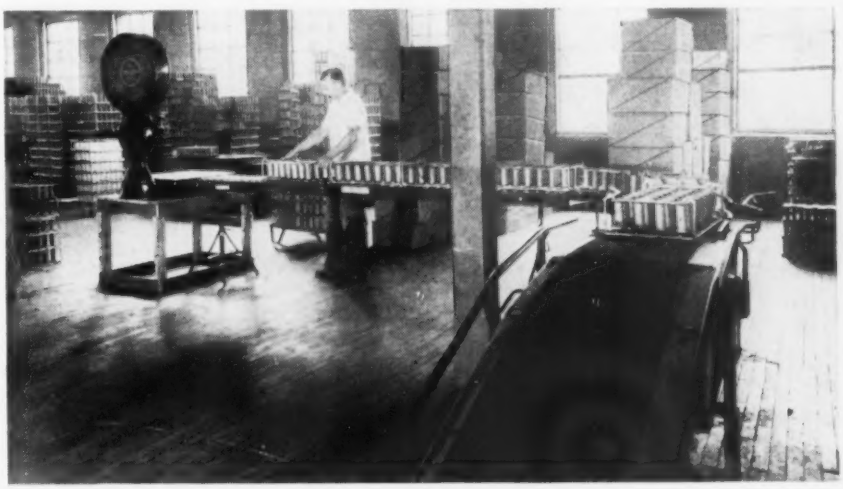
Uniform conditions *as to temperature and humidity are testified to by this weekly record. The jump in the humidity occurs regularly on Saturdays as screens are taken out of the air-conditioning system for cleaning.*

tion system, completely integrating mills A and B, and achieving flexibility to handle a wide variety of synthetic yarns. George N. Fleagle, assisted by Charles T. James, plants manager, is general manager of the Bethlehem throwing plants mill A and mill B, heading up production. John E. Hooke, in the New York office of Martin Fabrics Corp., heads the throwing division sales.

The throwing division of Martin Fabrics Corp. has been doing much experimental and development work to lead in the field of nylon hosiery throwing. Among current developments for the hosiery industry are: the successful coning and tubing of 10- and 15-denier monofil nylon and the throwing of nylon grenadine twists.

An additional department of the throwing division is concerned with throwing for the lace, weaving, knitting, and velvet industries. In the line of developments for these trades, the plants have been successful in the delivery of 20-22 oz. cones of multi-ply heavy-denier nylon free of ply knots; cellulose-coated aluminum foil yarn alone and in combination with other fibers; Fortisan, Vinyon, and Cordura yarns, as well as the usual constructions of acetate viscose, and cuprammonium yarns developed to meet the specific requirements of customers.

Naturally, with a wide range of yarns being run, most of them un-



Empty trays *from mill A are being received here at mill B by Joe Nemeth. The scales and conveyor are used to weigh and ship wound yarn from mill B.*

Continuous-Process-Perfection

Links with Belgium's Textile Traditions

● As far back as the Fifteenth Century nobility journeyed from all parts of Europe to view the famous Brussels Tapestries. No other artisans could match the skill that brought such wide fame to these master weavers . . . a fame that was based on rigid demands for perfection.

Now, continuing in a tradition of textile perfection, Fabelta of Belgium has joined other leading European rayon producers in acquiring rights to Industrial Rayon's revolutionary Continuous Process.

It is fitting indeed, that this achievement of the modern textile era should link with the 500 year heritage of Belgium's fine textile traditions. This addition to the growing list of countries adopting the Continuous Process is further indication of its continuous progress in the world's textile industry.

Tapestry courtesy of the Cleveland Museum of Art

INDUSTRIAL RAYON CORPORATION

CLEVELAND, OHIO • NEW YORK OFFICE: 500 FIFTH AVENUE

Makers of *SPUN-LO Rayon yarn and cloth • *TYRON Rayon yarn, cord and fabric

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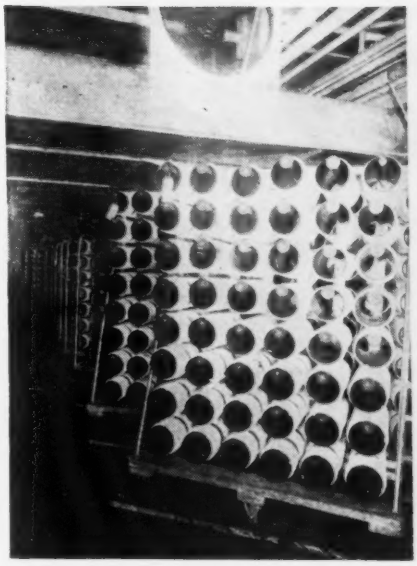
tinted, a good identification system had to be worked out. The procedure used involves, in the main, the use of colored and printed cellulose tapes. But in addition to the strips of tape which are placed on each package as it goes through the mill, the yarn is crayon marked with symbols of various colors; and trays, trucks, or boards of yarn are tagged. The triple system has resulted in a minimum of lot mixtures (that bane of all throwsters).

ENGINEERING. The company has engaged Stevenson, Jordan & Harrison, Inc., of New York, to assist in its program. The resident engineer, William W. Manville, has just completed installation of a Floor-Veyor conveyor built by Rapid-Standard Co., Inc., at mill B to move yarn and other materials from the warehouse to the second floor, as shown in the pictures, and to convey trays of bobbins and the like from the second floor to the warehouse. Parts of the system can readily be moved since it is a combination of apron and gravity-roller equipment.

Not shown in the pictures is a portable conveyor unit which can be placed in trucks and which joins the apron conveyor.

In addition to installation of piecework incentive systems, jobs are studied to determine the best way to perform them and to reduce unnecessary work. In the pirn-winding operation shown, for instance, the operator need walk no more than 8 ft. to get her empty take-up bobbins—her supply bobbins are within inches of where they are needed. The resident engineer is training mill employees in timestudy and other work to be continued indefinitely. Part of the mill's program includes use of packages holding up to 8 oz. of yarn.

Mills A and B are integrated in that mill B soaks and pretreats yarn when necessary in addition to winding it, whereas mill A does the twisting (single-end and ply), single-end sizing, coning, and shipping. Semi-live skids and lift trucks are used for most inter- and intra-plant transporting.



Lagging for 24 to 72 hr. *is the step between sizing and coning. Note the fans for rapid air circulation to speed the drying of the size.*

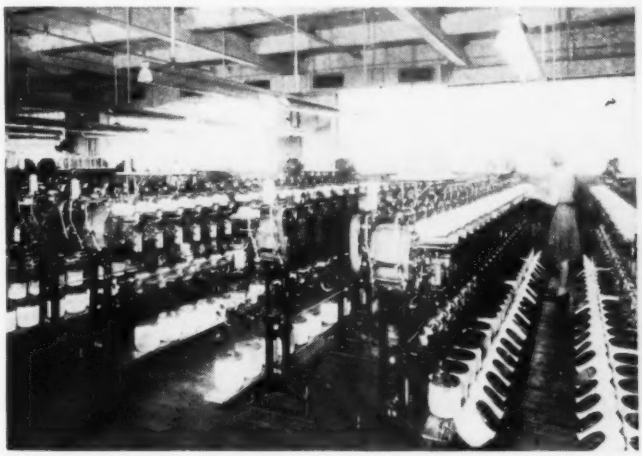
Identification *by means of washable crayon marks on the yarn and colored tape on the packages guards against yarn mixtures. Operators, such as Annabella Smith shown here, recognize the seriousness of mixed lots—the mills run as many as 50 lots at a time.*

NYLON THROWING. The nylon-sizing room at mill A is believed to be unique in regard to a recessed floor in which is placed much of the equipment for filtering and circulating size (PM-90). Glass piping is used to a large extent, and the machines are not placed back-to-back as in most nylon-sizing rooms. The arrangement shown in the picture permits using the back of one machine to store empty and full packages. A continuous cleaning schedule is used, thus relieving operators. The schedule calls for spindles in groups of 18 to be cleaned by a special crew.

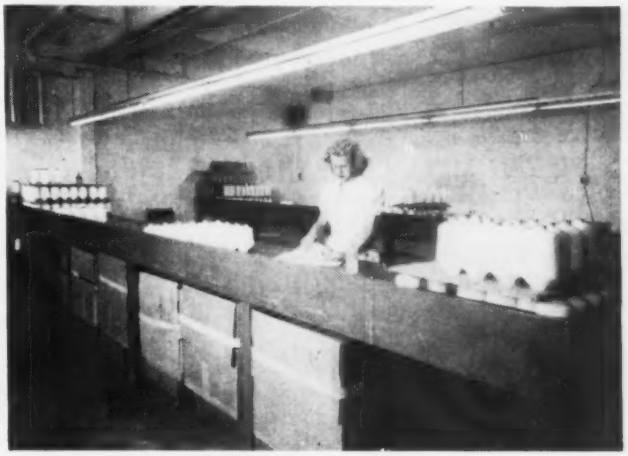
The machines here, as in other parts of the plant, are leveled by means of studs which go through the feet to a piece of flat iron on the floor.

Temperature and humidity, of course, are controlled to close limits in the sizing room, as the reproduction of a weekly chart shows. Viscosity of the PM-90 size used is checked every 2 hours in a laboratory which adjoins the sizing room and the offices. The laboratory is the center of the throwing plant's quality-control program which includes, besides viscosity testing mentioned, twist testing, tension testing, identification checking, oil and size

(Continued on page 218)



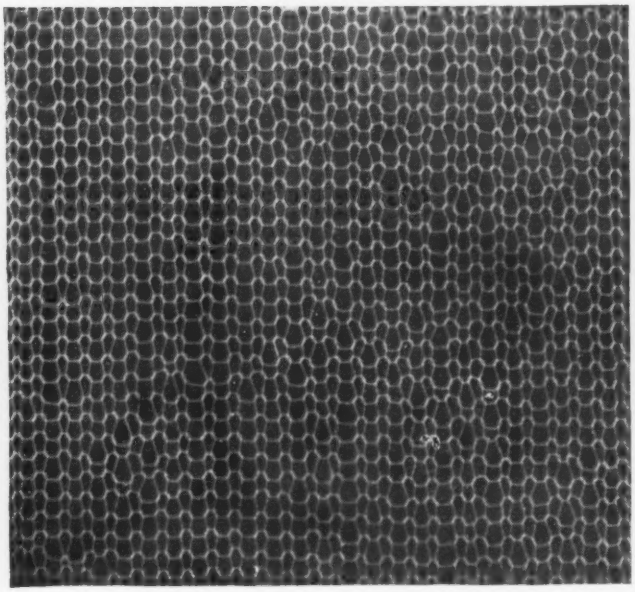
Neat and clean, *the main coning room is air conditioned, fluorescent-lighted, and utilizes glass block in outside walls. Note supply of sized yarn and convenience of cone trays. Hosiery nylon is oiled during coning.*



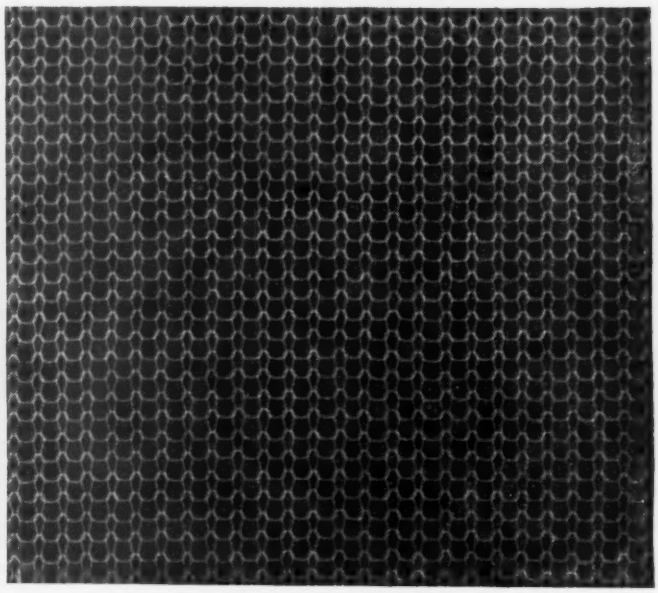
Yarn being packed *is inspected for underwinds, overwinds, faulty knots, build, lot number, yarn mixture, and cleanliness. Stephanie Zamper has bottle of cleaner ready to remove superficial soil marks where they have been incurred.*

Kōnrite

"TREATS" YARN "RIGHT"!



Here's fabric knit from conventionally treated yarn



Here's fabric knit from KŌNRITE treated yarn

See the Difference?

That's because KŌNRITE treated yarn gives the clear, perfect stitch formation so important in nylon hosiery of the finer grades. This new and unusual coning oil offers many other advantages, as well, that make for greater uniformity in Coning, Knitting and Seaming.

Write today for full information on KŌNRITE

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KŌNRITE ...

- ▶ **produces cones of proper density.** Overlaps, crossovers and underwinds are practically eliminated. Increases cone production besides.
- ▶ **yields uniform cones.** Its controlled viscosity assures even distribution of oil on the yarn.
- ▶ **minimizes stripping of size in knitting.** Reduces press-offs.
- ▶ **permits rapid cementing of stitches,** resulting in a clear and perfect fabric.
- ▶ **reduces curling.** Increases seaming production.
- ▶ **prevents softening in lagged yarn and fabric.**

Kōnrite — The Outstanding Nylon Coning Oil

Prof. Edward R. Schwarz

AWARDED OLNEY MEDAL

FOR OUTSTANDING ACHIEVEMENT in the field of textile chemistry, Prof. E. R. Schwarz, Textile Div. of Massachusetts Institute of Technology, was presented the Olney Award Oct. 25 in Chicago during the annual convention of the American Association of Textile Chemists & Colorists. He is the author of "Textiles and the Microscope," published by McGraw-Hill; co-author of "American Cotton Handbook" and "Matthews Textile Fibers"; and author of scientific and technical papers. He is a fellow of the Textile Institute, of Manchester, Eng., and the American Association for the Advancement of Science, as well as member of a number of other technical associations, including the AATCC.

NORTHERN N. E. Section Wins AATCC Contest

***HIGHLIGHTS:** Annual meeting in Chicago honors E. R. Schwarz—Intersectional contest discloses advanced technology — Resin-bound pigments protect against weather—Electrical charge influences dyeing—Chlorination necessitates more careful selection of dyes—High temperature can delay soil removal—Technique controls speed of dyeing.*

THE INTERSECTIONAL CONTEST during the annual meeting of the American Association of Textile Chemists & Colorists held in Chicago Oct. 23 to 25 was won by the Northern New England Section; portions of the winning paper appear below along with condensations of papers by the other sections competing. Reports of other important technical papers presented will be published later in TEXTILE WORLD.

PRIZE-WINNING PAPER

Electrolytic Method For Stripping Dyed Wool

NORTHERN NEW ENGLAND SECTION

Many stripping agents will not strip most vat and chrome colors from wool, and they leave the goods harsh and boardy. Titanous sulphate strips satisfactorily and also offers the opportunity of being re-reduced by electrolytic means during the course of a strip. Electrolytically prepared and regenerated titanous, chromous, or vanadous sulphate may be used with equal success as stripping agents for wool.

A solution of vanadium sulphate, prepared by dissolving vanadium pentoxide in dilute sulphuric acid, is poured into the cathode pot portion of the prepared cell. A direct-current potential is imposed across the electrodes whereupon reduction occurs at the cathode, thus producing vanadous sulphate. The cell is continuously operated so that vanadous sulphate is continuously regenerated during the strip to maintain constant reducing power.

Easily stripped dyes, such as acid colors, require 5 to 20 min. Chrome colors may take 20 to 90 min. Indigo and vats usually require 60 to 90 min. Dyestuffs which do not strip in 90 min. will not strip by this process. The only dye so far encountered which will not strip at all is Alizarin Black WR. It is advisable to design a unit wherein the electrolytic cell is entirely separated from the chamber where the wool is stripped. The stripping agent is continuously pumped to the stripping chamber, and is then returned to the cell where the oxidized vanadous, chromous, or titanous ions are again reduced. Filters are provided to prevent any fiber from contaminating the cell.

The advantages of this electrolytic process are:

1. Dyestuffs impossible or difficult to strip by present methods are successfully stripped.
2. The "hand" of wool so stripped is substantially as soft and resilient as unstripped wool.
3. Strength losses for woolen fabrics so stripped are under 8% for 20 min., under 10% for 40 min., and under 24% for 90 min. Increases in elongation up to 12% for 20 min., 32% for 40 min. and 18% for 90 min. are obtained.
4. No objectionable residual odor is noted.
5. Stripping is conducted below the boil.
6. No prescouring is necessary.
7. A constant level of reducing power is maintained throughout the duration of the strip.
8. Within practical limits, the reagent may be continuously and repeatedly used, thus maintaining a low cost.
9. Samples so stripped may be satisfactorily redyed with light shades.

Application of Chemical Controls to Acid Dyeing

PHILADELPHIA SECTION

Frequently in wool dyeing, as much as 50% of the dye is absorbed in the first 2 or 3 min.; and the dyer must resort either to lower temperature at the start or to intermittent additions of acid during the dyeing process. Numerous dyers, when asked how they would like to control the rate of dyeing, replied that the ideal rate would be a uniform one, where the dye is absorbed at a constant rate. An arbitrary rate of 1.67% per min. (60 min. total) was chosen; and an easily controllable dyestuff, Azo Rhodine 6B, was taken. A predetermined dyeing curve based on 100% absorption was made. As the dyeing progressed, acid was added to keep the dyeing near the predetermined line. It was found that the equalizing dyes can be made to follow the predetermined line very accurately.

The noteworthy feature is that the pH curve of the equalizing dyes follows approximately a straight line, as does that of the milling dye as soon as the dyeing curve reaches the predetermined line. Conversely, the pH curve should be made to follow approximately a straight line in order to obtain a uniform rate of dyeing. Thus the dyeing can be checked or controlled by pH instruments to insure uniformity of dyeing.

In the experiments, numerous small additions of acid were necessary to keep the dyeings at a uniform rate. It would be much more convenient and practical if the proper acidity could be developed in the bath. Ammonium sulphate and ammonium acetate have been used near the neutral point where pH values close to 7.0 are needed. Their range is, however, very limited. To expand this range an investigation of numerous acid and acid-forming compounds was undertaken.

Chloral hydrate, one of the compounds showing a great change in pH, was taken to illustrate the effect of its use in dyeing

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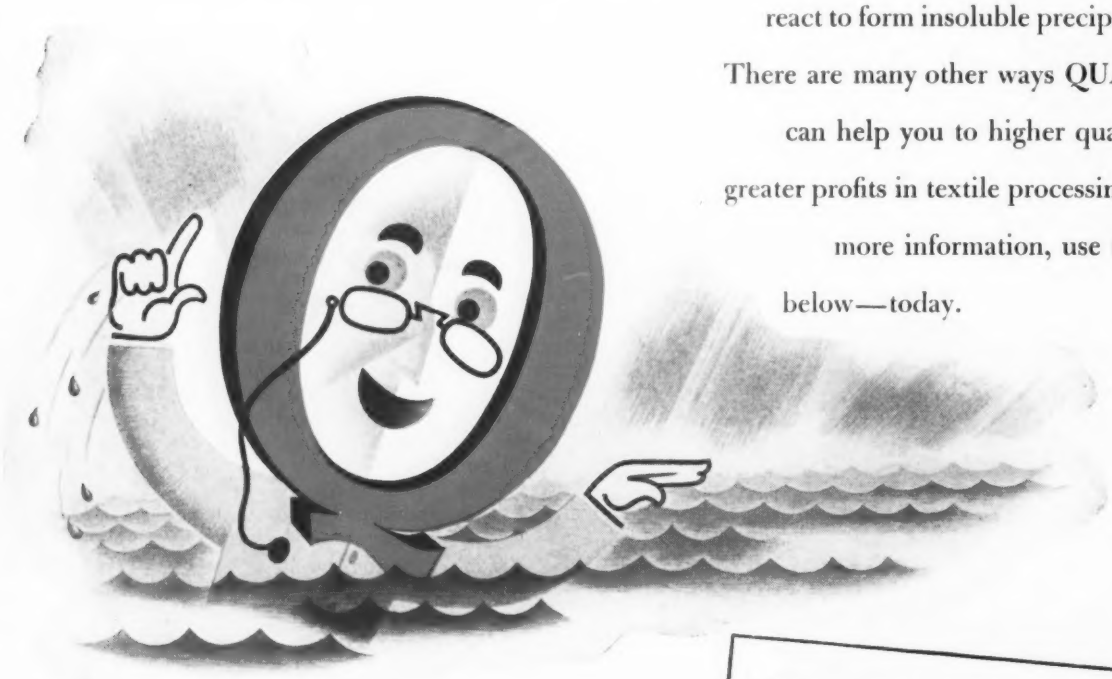

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an equalizing color. Using 4% of chloral hydrate, the dyeing curve remains close to the predetermined line up to 50% of the exhaustion, then exhausts more slowly up to a final exhaustion of 70%. This is a long range to be attempted by one chemical, and a stronger acid or acid-forming compound would be added at 50% exhaustion. Using 4% malonamide with a milling-type dye, the dyeing curve follows the predetermined line up to 57% exhaustion. From then on, another compound would be added to continue the dyeing along the straight line as before. These acid-forming compounds can be adjusted in their effect by changing the percentage used and various ones used to fit the type of dye. These two compounds have been chosen to illustrate the point, and are not necessarily the most economical. The retarding effects of various acid-forming compounds vary considerably.

Weather-Protective Treatments For Cotton Duck

SOUTHEASTERN SECTION

Resin-bound pigments appear to offer better protection to cotton fabrics against deterioration by weather than other treatments under test, as is shown by the use of urea-formaldehyde and lead chromate, either alone or in combination, on bleached duck. Treated with urea-formaldehyde alone, the sample suffered a strength loss of 25% after exposure; with lead chromate alone, precipitated *in situ*, it lost 19%; with lead chromate *in situ* aftertreated with urea-formaldehyde it lost 6%; and with lead chromate applied as a pigment bound with urea-formaldehyde resin, the sample suffered no loss at all in breaking strength. The untreated gray and bleached controls lost 42 and 43%, respectively, as averages from values obtained from samples at the four stations where exposure was made.

The finishes chosen fell into four groups: Clear resins alone; resin-bound pigments; pigments precipitated *in situ*; and pigments *in situ* aftertreated with the clear resins. Methyl methacrylate resin was used in order to find out whether or not it imposed a physical barrier against biological attack. Oil-modified alkyd resin was selected for test because of its ready availability and its common use in industry as a binder for pigments. Urea-formaldehyde was chosen because in some previous work on its use as a pigment binder the incidental observation was made that this resin rendered the fabric more resistant to breakdown by radiation from a carbon arc. The pigments used were selected either because of known light-protecting or fungicidal properties or because knowledge was desired of the protective action of colored pigments which would be compatible with the color of dyed fabrics.

The different clear resins alone applied to the army duck exhibited different effects, with urea-formaldehyde offering considerably more protection against total weathering than the other two. The oil-modified alkyd resin and the methyl methacrylate resin gave practically no protection by themselves. Lead chromate and chromium oxide, which of themselves have excellent light-screening properties, when incorporated with resins showed the greatest protective effect. Monastral Fast Blue, not only protected the sample well but permitted it to retain much of its color and appearance. Pigments selected for their fungicidal properties are at the bottom of the list—a fact which apparently bears out the observation of Barghorn that the more effective fungicides seem to catalyze photochemical degradation.

Effect of Aqueous Chlorination On the Dyeing and Fastness Properties of Wool

NEW YORK SECTION

Fastness to washing of dyeing is generally decreased by anti-felting treatments involving the aqueous chlorination of wool; the effect is less with those dyes which possess greater fastness on the untreated wool according to investigations involving five different treatments. No significant effect of the treatments on the light-fastness of the dyes was observed. While the rate of dyeing is considerably influenced by these treatments, the final dyeing shows little difference in the case of acid, milling, metallized, chrome, and solubilized vat dyes, whereas in some cases marked differences were found with vat dyes.

Dyeing tests with acid, milling, metallized, chrome, and solubilized vat dyes showed that some of the treatments increased the rate of dyeing, and other treatments decreased the rate of dyeing. However, in most instances the treatments had little effect on the final dyeings. In view of this consistency of visual color value and shade, the dyer may use the same formula interchangeably on chlorinated and unchlorinated material, giving due consideration to the changes in the rates of exhaust. It should be noted, however, that some of the more sensitive dyes in these classes show distinct shade changes on some of the chlorinated materials.

Effect of Urea On Cellulosic Textiles

SOUTH CENTRAL SECTION

Flame-resistant cotton can be obtained by treating cotton with urea and phosphoric acid. In the process, urea lowers the surface tension and probably acts as a swelling agent, thus permitting the penetration of the mixture. Even dilute aqueous solutions of phosphoric acid are detrimental to cellulose, but evidently a complex is formed with urea which minimizes the deleterious action. Wash-resistant flameproofness was not obtained when scoured skeins of cotton yarns were treated with mixtures of aqueous solutions of urea and phosphoric acid at 100° C.

Work at higher temperatures, using what appeared to be the optimum molar ratio of urea to phosphoric acid (viz., 3:1), show that permanent flame-resistance could be secured at 120° C. only after heating the skeins for 40 min. Similar results were obtained after 20 min. at 140° C. or 10 min. at 160° C. However, the strength of the treated yarn was an inverse function of time and temperature. There was little, if any, increase in weight of the washed treated yarn, and the hand was essentially equivalent to that of the original material. This indicates that the flame resistance secured is the result of chemical action, and is not due to loading the yarn with flame-resistant materials.

The effect of urea and other additives on the mercerization of cotton was investigated. It was found that the addition of urea caused an increase in the contraction of cotton yarn in presence of 10° and 20° Be. sodium hydroxide. There was little effect at 30° Be. and the contraction in this concentration of caustic was less than in more dilute solutions. The maximum effect was exerted by small amounts of urea in 20° and 25° Be. caustic solutions.

Carboxy Methyl Cellulose In Wet Processing

MIDWEST SECTION

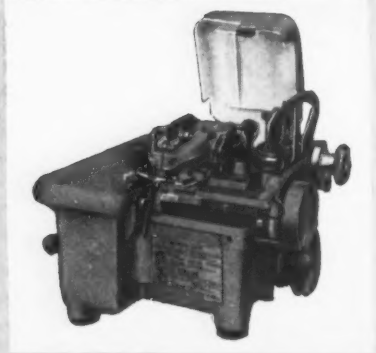
This paper discusses the value of sodium carboxyl methyl cellulose, or CMC, as an aid in the wet-processing of textiles, and particularly as a detergent aid. CMC is usually made in four viscosity types: low, medium, high and extra high. The absolute viscosity of each of these types varies among manufacturers. It has been recommended as a hydrophylic colloid, a stabilizer for suspensions, or an emulsifier for oil-in-water emulsions. It has been found useful as an adhesive, as a powerful thickening agent, in film-forming applications, and in several other functions.

An investigation was initiated to determine the effectiveness of CMC as a detergent in combination with a variety of synthetic surface-active agents as well as with a low titered soap, and to compare it with other materials. Results obtained from a comparison of 10 detergents with 0%, 1%, and 10% CMC, based on the active detergent, indicate that CMC shows a high degree of efficiency in improving the detergent properties of synthetic detergents and soap. The mode of action is to improve the soil-suspending properties of the system rather than to promote actual soil-removal ability. In this respect it is superior to various other thickening agents proposed for the same purpose. The effect produced is more pronounced with the synthetics than with soap because of the inherently poorer suspending properties of the former. The only detergent which showed no effect whatever from the CMC was a quaternary ammonium compound, which formed a precipitate with CMC even in the presence of 0.25% sodium carbonate.

From a practical standpoint the cost of CMC must be at least compensated by the possible reductions in scouring time, the quantity of detergent used, or the enhanced appearance of the fabric. These factors must be worked out in each application.

(*Continued on page 230*)

For Quality Seaming



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Instruction Saves HALF-HOSE QUALITY

HIGHLIGHTS: *Fancy half-hose quality results from proper setting of automatic wrap-reverse machine — Step-by-step adjustments assure perfect plating, correct vertical striping, and proper color patterning.*

BEFORE

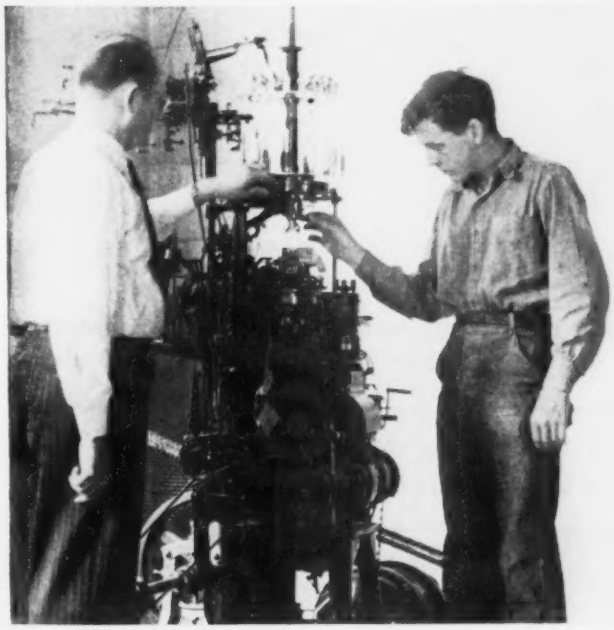
By CHARLES W. ARROWOOD, *Head of Knitting Dept.*
North Carolina Vocational Textile School, Belmont, N. C.

AFTER

SERIOUS HALF-HOSE DEFECTS may be caused by out-of-time pattern drums or improperly adjusted timing controls. The only safeguard against such defects in high-quality hose is constant and intensive instruction of fixers and operators in the fundamentals of mechanical control. Insofar as the Banner wrap-reverse machine is concerned, many of the adjustments taught students at the North Carolina State Vocational Textile School, Belmont, N. C., are adaptable to mill use. Shown as a series of steps numbered from 1 through 6, these adjustments are the most likely sources of pattern skips and other defects shown in the hose marked "before" as reproduced above.

The Banner wrap-reverse machine is automatic in its control of all the moves necessary to construct the various parts of the hose, such as the Banner rubber top, ankle, heel and toe, looper line, etc.; and its functions are too numerous to be explained in a short article. Some of these functions are not covered by the steps 1 to 6, but they should be completely understood by the operators and fixers in the fancy half-hose mill. The adjustments shown are those which seem most necessary to check and to correct in view of the pattern defects found in the hose marked "before." In correcting the fault, however, on the new Hemphill machine only two of the outlined steps required actual adjustment, those numbered 1 and 6. The others were thoroughly checked and are included as possible sources which should not be overlooked by the competent fixer.

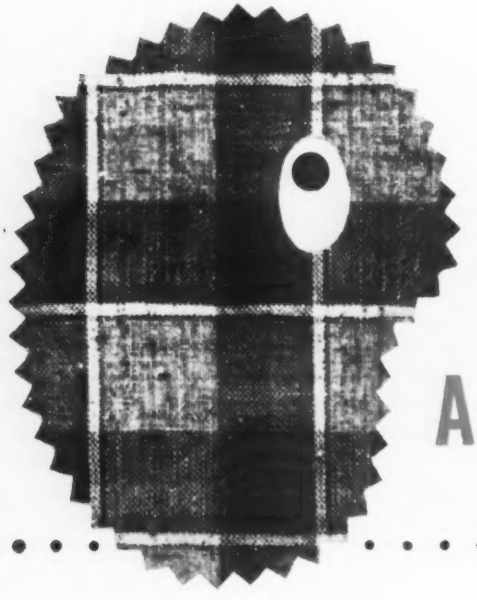
LOOK FOR OTHER CAUSES. Certain phases of maintenance and general care of the automatic fancy machine should be emphasized in the instruc-



1. Check the yarn *and color pattern and see that the machine is properly threaded. Tensions on yarn are adjustable for the different counts and types of yarn as well as for the straight or reverse plating yarn. The tension on the backing yarn should be carefully set so that correct plating may be obtained.*

2. Reset the chain *and the timing of the machine. The chain selects all of the automatic changes of the Banner machine and is responsible for actuating the machine's construction of the various parts of the hose: Banner top, ankle, heel and toe, looper line, etc. Retime the machine as for the beginning of a new hose. The correct number of courses to knit may be figured from the moves of the chain. Each link has three moves and four courses per move, or a total of 12 courses per link outside of the heel and toe. Inside the heel and toe, there are two courses per move, or six courses per link.*

do you know
what is the biggest development
Q. in cotton in 15 years?



it's wrinkle-resistant cotton...
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achieved with Monsanto's unique
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Not since the coming of shrinkage control and vat dyeing has anything so important to cottons occurred.

By impregnating the individual cotton fibers with Monsanto's Resloom C, Dan River finishing experts have been able to create a cotton fabric that *really resists wrinkling.*

This new fabric has a crisp, springy "hand" . . . and the wrinkles fall away like nothing ever seen before. Resloom will not wear away or wash away.

First developed, in an interesting new cotton tweed, Dan River expects to carry these new properties into cotton chambrays, ginghams, twills.

Here is an excellent example of what a planned program of cooperation between fabric creator and textile chemical manufacturer will yield.

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For Resloom information address: MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, 140 Federal Street, Boston 10, Massachusetts. Resloom: Reg. U. S. Pat. Off.

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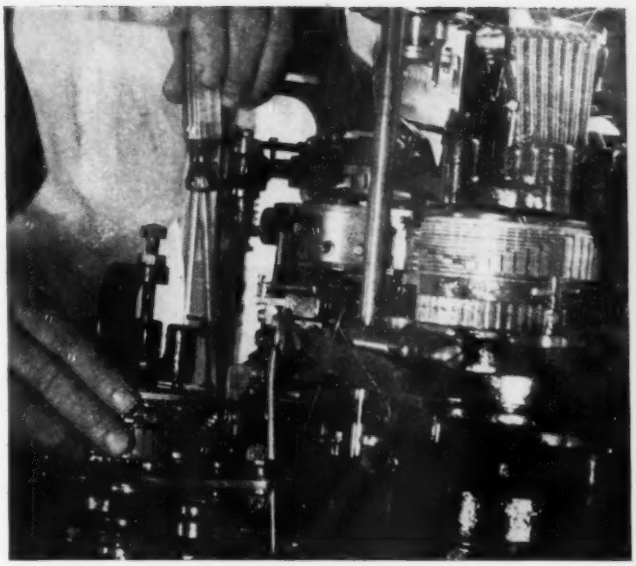
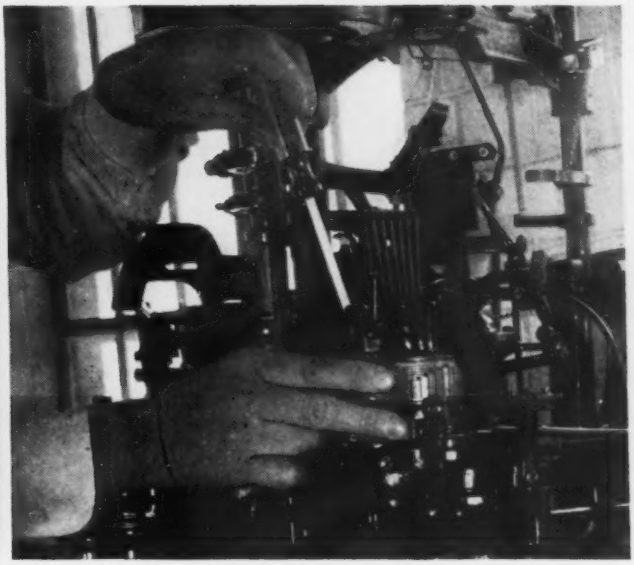
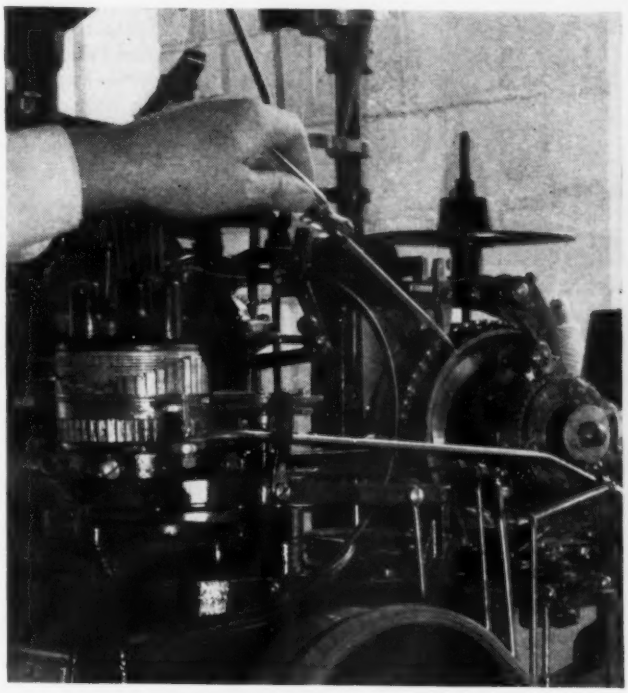


3. ***Adjust the timing*** *of the needle-jack pattern drum for defects in the vertical stripe or wrap pattern.*

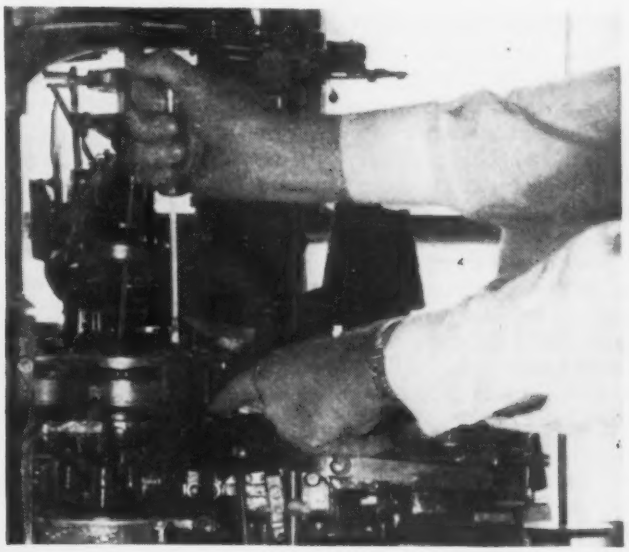


4. ***Check the timing*** *of the plating-sinker pattern drum to insure the correct development of pattern design.*



5. ***Time the color-pattern drum*** *for variations in color which of course correspond to the hosiery pattern.*

Photos by Mal Bowden, Southern Editor, TEXTILE WORLD



6. ***Gage the stitch-cams*** *with special gage and set from plate at a distance to draw the proper length of loop. Careful setting of the reverse-plating sinker cam is also necessary to obtain perfect reverse plating of yarns in the hose. The correct feeding of yarns into the needles and the adjusting of tension on the reverse-plating yarn should be controlled accurately. In general, stitch-cams may be set to knit 3/10 more courses per in. than wales to produce better knitting and plating. To do this, adjust stitch-tensions and gage the stitch-cams.*

tion of fixers and operators, if constant quality is to be obtained. Correct speeds, needle care, oiling, and general maintenance are factors which the mill man recognizes as useful aids to a quality product.

The speed of the Banner wrap-reverse machine, for example, should be limited to approximately 170 rpm. Depending upon the condition of the machine, a higher speed may result in an immediate increase in production and a gradual, if not immediate, decrease in quality. Too often, high speeds on fancy machines result in both decreased production and quality. Since quality is the prime requirement in fancy half-hose, machine speed is a minor factor until it reaches the point where it endangers quality. Therefore, the safer speed of the Banner machine appears to be around 160 rpm., with 170 rpm. as a fairly safe maximum speed.

Unlike staple-hose production in which minor defects may be tolerated or overcome to some extent, fancy-half-hose production demands perfection; and the slightest defect is disastrous to the patterning effect in the hose. The automatic reverse-wrap machine is an ingenious combination of varied half-hose patterning, but it should be supported by ample maintenance and care, including regular schedules of machine inspection.

Inspections should give particular attention to nicks or wear in needles, sinker, and jack cams. Wherever wear occurs on any of these vital parts, the machine should be taken out of production and the parts removed. Sometimes polishing will remove nicks on the cams, but often the faulty part should be replaced by a new part.

Rayon Reports

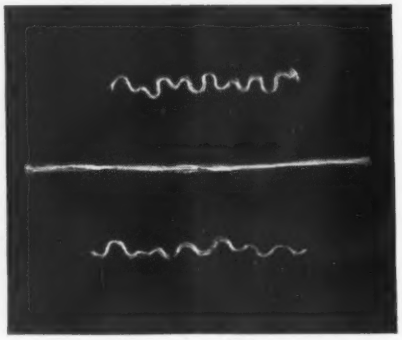
Prepared Monthly by American Viscose Corporation, New York, N.Y. NOVEMBER 194

New Permanently Crimped Rayon Staple Now Achieved by American Viscose

Viscose rayon staple with a *permanent crimp* — of far-reaching importance to the textile industry—is a recent achievement of American Viscose engineers.

Many experiments on full-size machinery in AVC's Textile Research Department, as well as in mills, have already demonstrated the fiber's remarkable utility. By itself or in blends with wool, cotton, and other rayon fibers, it imparts a crisper hand and bulkier appearance. In soft-nap fabrics, it provides warmth without excess weight to a remarkable degree, by "bulking up" the yarn and preventing formation of tight, dense fiber groups. It also gives a crisp, lively, full hand to higher twist fabrics such as gabardines.

Studies further show that it presents no manufacturing problems to spinners and weavers, and calls for no new equipment and no special personnel training.



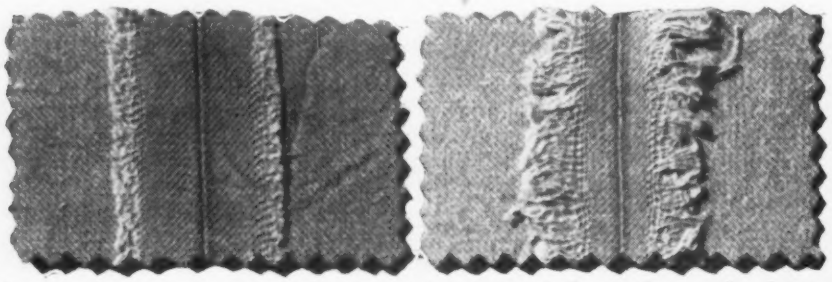
At top is a sample of the new Avisco Crimped Staple. Next is a sample that has been wet and dried out under tension. Finally it has been rewet and redried in a relaxed state, and the crimp has fully returned.

In carding, the web shows excellent cohesion without excessive neps. On the woolen and worsted systems, card roving is full and ends-down per hour are lower than with standard staple.

In drawing and spinning, too, it shows a remarkable ends-down efficiency and permits lower twist in the yarn with faster front roller speed and production. In all other fabricating operations, Avisco Crimped Staple reacts the same as standard staple.

By extending rayon's usefulness to new horizons, Avisco Crimped Staple is an outstanding example of Avisco's "4-Ply Service" in action . . . a notable achievement of AVC's continuing program of fiber research, fabric design, fabric production and fabric finishing.

For further facts as well as samples of fabrics constructed with the new fiber, write today for the booklet, "Avisco Crimped Staple." Address: American Viscose Corporation, 350 Fifth Avenue, New York 1, N.Y.



Examples of resistance to seam raveling in laundering. Left swatch is made of Avisco Crimped Staple, right of regular viscose rayon staple. Both swatches are of identical construction, and underwent 5 identical launderings.

RAYON 20 YEARS AGO

NEW YORK, Nov., 1927 — Grade A domestic rayons are quoted here at between $2.45 for 55 denier and $1.15 for 900 denier, per pound.

LONDON, ENG., Nov., 1927 — A recent patent covers a new method of manufacturing viscose rayon having a reduced luster.

NEW YORK, Nov., 1927 —"It" girls of this Jazz Age are saying they'll never wear those long skirts again.

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
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Official check-up *is being made of a new cloth construction by Randolph Sutton, superintendent of weaving, at Shelton Loom's Caromount Div. Mrs. Mamie Taylor is operating the looms on this fabric. Worley Edwards (left) and Jimmie Speight (right) inspect the new set-up. Mr. Sutton teaches weaving to a class of 45 workers who wish to broaden their knowledge of the subject.*

SPIRIT OF TEAMWORK Key To Shelton's Fine Labor Program

HIGHLIGHTS: *Sidney Blumenthal plants at Rocky Mount and Wilson, N. C., have had 17 yr. of labor peace—Employee manual greets new worker—Personnel department aids employees in both business and private affairs—Active recreational program provided—Mutual respect between employer and employees is fostered.*

By JOHN M. GREGORY

Success of the employee-relations program at the Rocky Mount and Wilson, N. C., plants of The Shelton Looms is evidenced by 17 yr. of labor peace. E. H. Suessmuth, resident manager of the Caromount Div. of Shelton Looms, Rocky Mount, attributed this good feeling on the part of labor to the organization's spirit of teamwork. The company, he says, goes all-out to assist in workers' problems, and employees reciprocate in a feeling of mutual benefit.

Owned by Sidney Blumenthal & Co., of New York, which operates four other plants in Connecticut and Rhode Island, the Rocky Mount plant opened in 1929; the Wilson plant in January, 1941. Both weave a variety of fabrics, principally pile. Gray cloth from Wilson is dyed and finished at Rocky Mount. Neither of these mills is unionized. Two CIO elections for recognition of the union were beaten.

TEAMWORK IDEA. The spirit of teamwork is first implanted in a new worker by an attractive booklet called "Working With Friends." Following presentation of a cordial welcome from the president, this employee manual gives information a newcomer wants: wage policy, pay-day instructions, hours of work, rules for safety, holidays, and minor information.

To encourage the feeling of teamwork, the newcomer learns that he will be compensated for suggestions. Blanks are placed beside bulletin boards, in the weave shed and dye house, by the time clock, in the first-aid room at Caromount Div.; near bulletin boards in the Wilson Div.

First-aid room *at Shelton Looms plants is in charge of a registered nurse for each shift. Seated is Mrs. Mary E. Brunson, RN, third shift nurse; standing is Mrs. Mary Trevathan, RN, day nurse.*

Suggestions are typed without names and considered by a representative board. If any suggestion results in improvement or economy, a cash award is made. The plan was initiated in June, 1945; and 175 suggestions have been considered since that time.

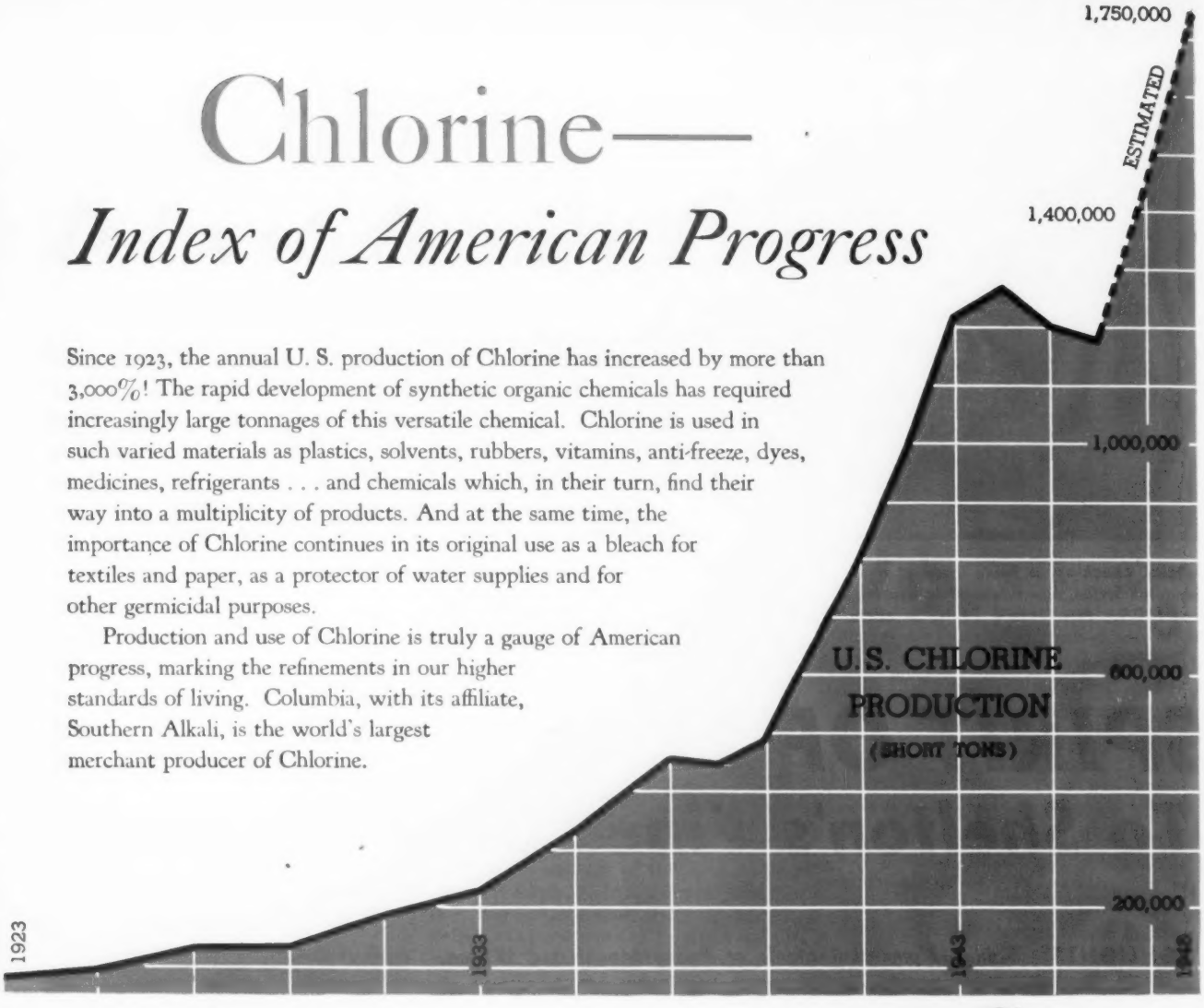
Opportunity is given ambitious employees to learn the science of textile manufacture in classes taught by competent instructors. Randolph Sutton,

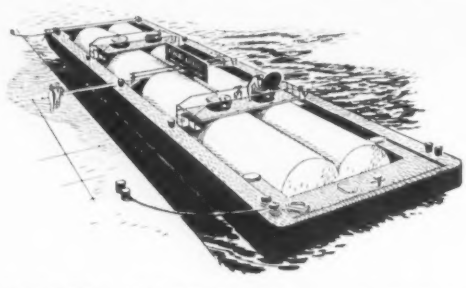
Chlorine——

Index of American Progress

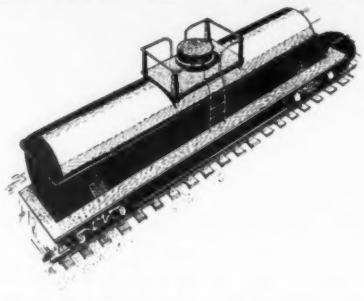
Since 1923, the annual U. S. production of Chlorine has increased by more than 3,000%! The rapid development of synthetic organic chemicals has required increasingly large tonnages of this versatile chemical. Chlorine is used in such varied materials as plastics, solvents, rubbers, vitamins, anti-freeze, dyes, medicines, refrigerants . . . and chemicals which, in their turn, find their way into a multiplicity of products. And at the same time, the importance of Chlorine continues in its original use as a bleach for textiles and paper, as a protector of water supplies and for other germicidal purposes.

Production and use of Chlorine is truly a gauge of American progress, marking the refinements in our higher standards of living. Columbia, with its affiliate, Southern Alkali, is the world's largest merchant producer of Chlorine.





NEW COLUMBIA BARGES offer numerous advantages to large-volume chlorine consumers located along the Ohio-Mississippi waterways. Each barge has a capacity of 600 tons and has many features for safety and simplicity in loading and delivery.



55-TON CHLORINE TANK CARS were first placed in service through Columbia assistance in design. Complete transportation service includes 30-ton single unit tank cars . . . multiple 15 one-ton unit cars and 100 and 150 lb. all-steel cylinders.

PITTSBURGH PLATE GLASS COMPANY, COLUMBIA CHEMICAL DIVISION, FIFTH AVENUE AT BELLEFIELD, PITTSBURGH 13, PA.

Manufacturers of Alkalies and related products, including SODA ASH, CAUSTIC SODA, LIQUID CHLORINE, SODIUM BICARBONATE, CALCIUM CHLORIDE, CAUSTIC ASH, MODIFIED SODAS SODA BRIQUETTES, PHOSFLAKE, CALCENE T, SILENE EF, PITTCHLOR AND PITTCIDE.

COLUMBIA CHEMICALS

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PITTSBURGH PLATE GLASS COMPANY

superintendent of weaving, had 45 employees in his most recent class studying weaving. Instructors hold meetings to discuss progress of students, to find better methods to teach.

Wages are the highest in the area for the company's type of industry, according to the resident manager. Wages were increased 7½% in January of this year, 2½% in February.

Each employee is urged to make known a complaint immediately. His first recourse is to his foreman. Failing to obtain satisfaction, he may consult the superintendent, then the resident manager. A solution is found for each legitimate complaint, usually by the foreman. A complainant rarely reaches the resident manager.

AID FOR PERSONAL PROBLEMS. To further the feeling of teamwork, Shelton Looms extends its interest in employees to personal problems, recreational activities, insurance, bonus, and other assistance. Safety is a prime consideration. Warnings against accidents and helps toward their prevention appear frequently in the employees' monthly newspaper. A first-aid station is maintained, with a day and a night nurse, and prompt removal to a hospital is provided in cases of serious injury.

Insurance, paid for by the company, includes life, accidental death, dismemberment, daily hospital benefits, extra hospital charges, surgical benefits, sickness and accident benefits, and medical expenses. Additional insurance is carried for daily hospital benefits and extra hospital charges for wives of employees and unmarried children under 18.

Dependents of employees receive a discount on hospital ward charges, surgery, and medical attention. For these charges, the company guarantees cash payment to local hospitals, deducting cash advanced from employees' weekly pay check in accord with a previous consent. Coal may also be bought by employees from local merchants at a discount.

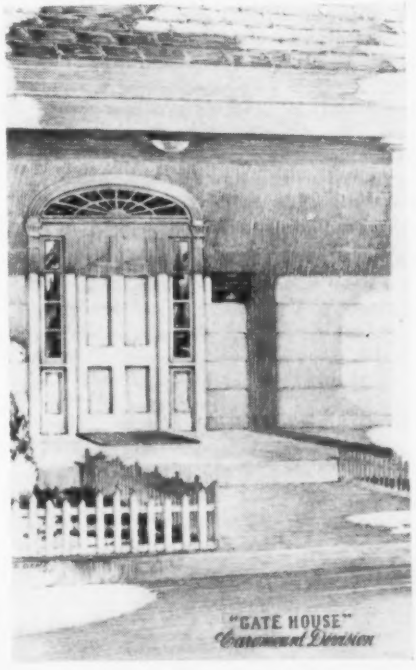
R. Quillan Ward, president of the Rocky Mount Junior Chamber of Commerce and national director for North Carolina, is personnel director for Shelton Looms. Head of his department for 5 yr., he has a duty to render assistance to all employees. He edits *The Caromount News*, the employees' monthly; supervises the field house, employees' club, directs athletic and other recreational activities. He is assisted by George Harper, who has a bachelor's degree in social science from Wake Forest College and has taken further study at Notre Dame and Columbia universities.

The Caromount News is a lively, newsy sheet of four pages. News from each department is written by correspondents working in the departments, they cover, with pictures of working men and women and their social and athletic activities. Holidays are announced, as are weddings and births. Special columns carry features. During World War II, copies of this paper and of the *Rocky Mount Telegraph*, local newspaper, were sent each month to employees in the armed services, in addition to birthday and Christmas gifts.

New Year's, Easter Monday, Fourth-of-July, Labor Day, Thanksgiving, and Christmas are holidays. A week's vacation with pay is allowed after a year's service. Promotions are based on ability. Length of service, ability, and family circumstances govern lay-offs and re-employment.

Mr. Ward assists employees in making out government forms, securing housing, and completing income tax reports. Loans, without cost, are arranged with employees for worthy or needy purposes.

***Caromount cafeteria** is open during all shifts to serve hot lunches to the plant's workers.*



***Drawing of entrance** to Caromount Div. "Gate House" is used to decorate front cover of employee manual. The building is near the main entrance to the plant. R. Quillan Ward, personnel director, has his office here.*

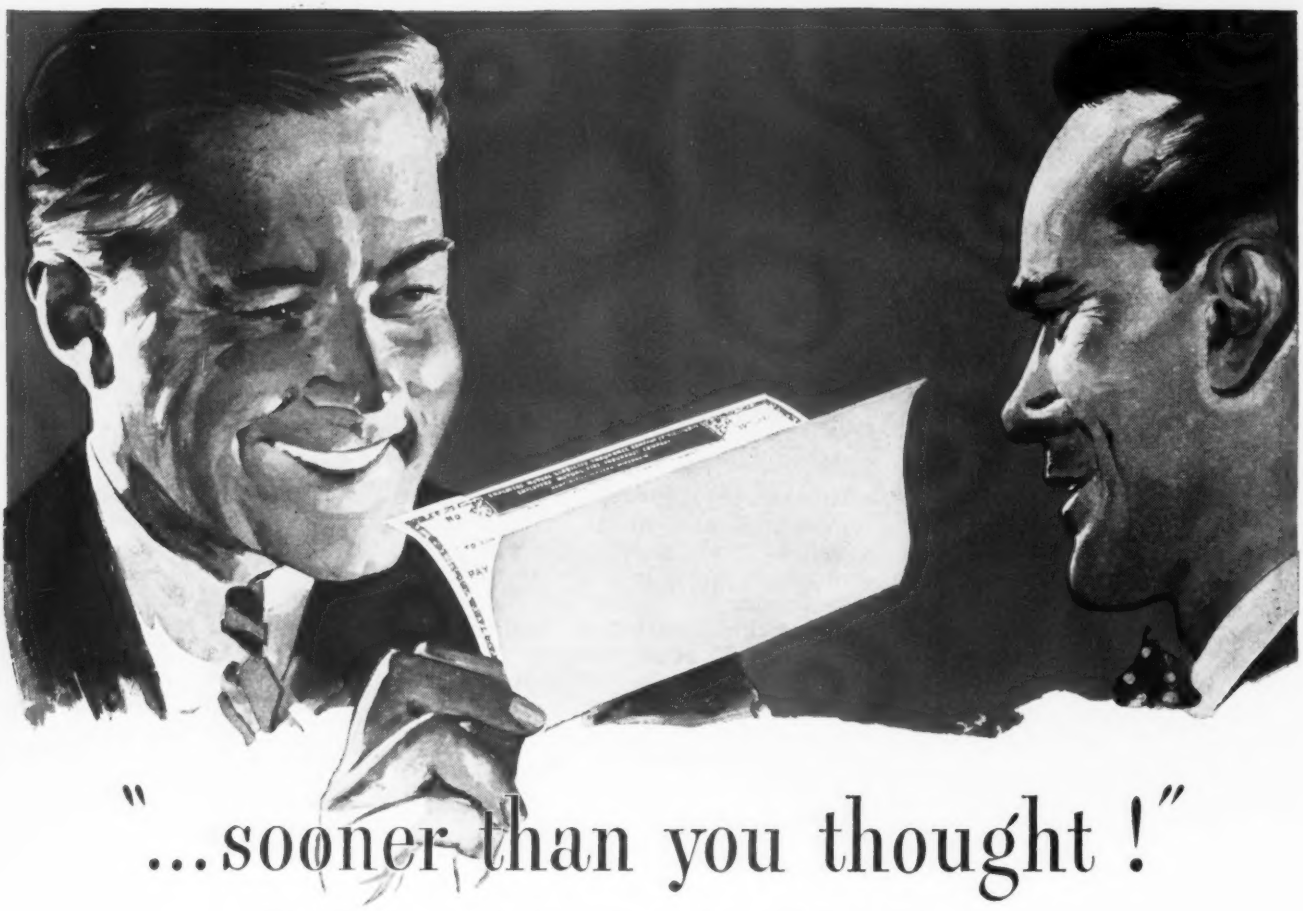
RECREATIONAL AND HEALTH PROGRAMS. Recreational programs include baseball, bowling, volley ball, and pitching horseshoes. Employees have two orchestras, one hillbilly, each with a girl singer.

The field house, across from the athletic fields at the Caromount plant, was completed recently by 65 employees. It comprises 832 sq. ft., is painted white, and will have a wide porch built around it. Its lounge, panelled in natural cypress, is filled with comfortable chairs and sofas upholstered in dark blue and maroon. It is used for meetings, parties, and dances; athletes are provided with a dressing room and showers.

Picnics, barbecues, and outings are prominent in recreational activities. Special parties are given negro employees and their families. Prizes for contests are awarded by the resident manager.

The Caromount cafeteria, under management of Ernest Taylor, serves hot meals from 8 a.m. until 2 p.m., and from 6 p.m. until 2 a.m. Tables are covered with red tile linoleum edged with chromium trim. An exhaust fan is capable of a change of air every two minutes. Profits from the cafeteria go to the employee recreation fund.

The present good relations between employer and employee at Shelton Looms have resulted from careful study and planning. Its most significant aspect, beside the 17 yr. of labor peace, is found in the sincere admiration and personal liking of employer for employee, and of employee for employer.



"...sooner than you thought!"

The Prompt, Willing, Cheerful and Fair Payment of Claims is a Record-Making Policy of Employers Mutuals of Wausau

The Employers Mutuals claim adjuster is hand-picked for his inherent capabilities and is company-trained in the cheerful, cooperative settling of claims. Therefore he is able and eager to protect the interests of the policyholders who own these fine mutual companies.

His success is attested, year after year, by many state insurance records which show Employers Mutuals of Wausau at or near the top of the list of all insurance companies for prompt payment of claims.

When you, as an individual or as a business executive, buy insurance, you rightly expect to be certain that you will be paid promptly, cheerfully and fairly for any loss you may experience.

Employers Mutuals recognize the importance of their obligation and especially so since their policyholders are "partners" in the business.

These companies—because of their carefully planned, skilfully executed, humanitarian services which save lives, prevent accidents, and reduce industrial disease—safeguard you and your property from legal liability and loss, reduce your insurance costs and cement good relations in every phase of personal and business contacts. Employers Mutuals handle policyholders' insurance affairs as policyholders would like them to be handled.

Contact the Employers Mutuals Man in your vicinity for a complete explanation of Workmen's Compensation . . . Public and Personal Liability . . . Group Disability (Health, Accident, Hospitalization and Surgical Benefits) . . . Fidelity Bonds . . . Burglary . . . Plate Glass . . . Automobile and other casualty insurance . . . Fire . . . Tornado . . . Extended Coverage . . . Inland Marine and allied lines of insurance. All these policies are nonassessable.

Did you know that *one* convenient policy can protect your business against every type of loss from theft, robbery, fraud, or dishonesty? A new booklet, "For Your Better Understanding of Comprehensive Protective Crime Insurance," which shows you how such a policy can be tailored to fit your needs, will be sent upon your business letterhead request. If you wish, we will also send you a copyrighted "Dictionary of Insurance Terms"—available only from Employers Mutuals of Wausau.

EMPLOYERS MUTUALS OF WAUSAU

. . . make insurance understandable

EMPLOYERS MUTUALS OF WAUSAU

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
HOME OFFICE: WAUSAU, WISCONSIN

Offices in Principal Cities—Consult Your Telephone Directory

TABLE I—COTTON-YARN STRETCH DATA

Mill No.	Stretch (%)	Excessive Stretch (%)	Yarn No.	Twist Multiplier	No. Ends	Speed (Yd. per Min.)	Size (%)	Moisture (%)	Stretch Control Used
1	1.5	2.5	7.5 to 20	4.00 to 4.75	224 to 1,500	30 to 70	3 to 12.5	7.5	White tension equalizer
2	1.0	2.5	14.5 to 16	———	420 to 3,000	32 to 50	4 and 10	6	None
3	———	5.48 (break)	16	18 (t.p.i.)	552 to 1,348	60 to 65	3.55	6 to 7.5	None
4	1.5	———	19 to 24.25	4.80	1,725 to 4,040	45 to 70	12.5	7.5	Variable-speed drive with micro adjustment
5	1.5 to 2.0	———	30 to 40	26.21 to 31.45 (t.p.i.)	486 to 3,400	40 to 75	3 to 12	6 to 8	Amount of cloth on delivery roll
6	1.5	———	4.5 to 20	———	1,300 to 6,000	15 to 60	9 to 10	7.5	None
7	1.5 to 2.0	———	21 to 30	4.75	2,500 to 4,000	35 to 65	10 to 11	6 to 7	None
9	2.0	3.5	12	16.13 (t.p.i.)	1,080	45	9	7	None
11	———	———	2.5	6.75 (t.p.i.)	1,452	15	7.5	8	None
12	1.0 to 1.5	2.0+	13.65 to 23	4.75 to 4.90	1,950 to 5,800	40	12	6.5	None
13	1.5	3.0	9	4.75	1,400 to 2,600	20 to 30	12 to 13	6	Yardage counters
14	As little as possible	5.0	16 to 30	4.60 to 4.75	1,900 to 2,350	50 to 65	8	8	Weighted warper beams and gear-driven cylinder
16	1.5—	———	12 to 20	4.75	2,000 to 4,500	15 to 30	10 to 12.5	°7	Variable-speed drive and tension cloth
17	———	———	11.5 to 13	4.75	2,160 to 3,300	———	12	7 to 8	Variable-speed drive
18	1.5	2.0+	14 to 32	4.75	3,000	40	10	5	Amount of cloth on delivery roll
19	Up to 2.0	4.0	8	13.5 (t.p.i.)	1,000	60	10	8	Reeves drive
20	Up to 2.0	———	10	4.75	3,600	175 oz. per min.	12	6.5	
22	1.0	———	12.25	4.75	2,300 to 5,200	45	———	7	Tension cloth
24	1.5 to 2.5	———	22	4.60	2,692	60	12	6.5 to 7.5	None
25	1.5	———	22	4.75	2,678	75	13	7 to 8	Reeves transmission

SLASHING PRACTICES
Receive Close Attention

HIGHLIGHTS: *Slasher size mix is stored from 3 to 30 hr., Georgia mill men report—Variable-speed drives give better control of stretch and moisture—Stretch of 1½% is necessary for splitting ends—About 13% of sizing materials is a total loss.*

TWENTY-FIVE GEORGIA MILLS, operating 1,182,204 spindles and 27,050 looms, revealed significant operating data on slashing and weaving at the Fall meeting of the Textile Operating Executives of Georgia, in Atlanta.

Seventeen questions, eight on slashing and nine on weaving, were submitted to all Georgia mills in advance of the meeting; and written answers from 25 mills were incorporated into an official report. These answers to the questions on slashing and oral reports on slashing practices given at the meeting are condensed for publication here. A similar report on the weaving session will appear in an early issue of TEXTILE WORLD.

Question No. 1. *What has been your experience with starch stabilizers? What is the maximum time that size may be held in storage kettles before a change in viscosity occurs?*

Do you agitate the size while it is being held over? If so, at what temperature do you hold it and at what speed do you run the paddles?

Twenty-three mills sent in written answers to this question. Six mills stated that they do not hold size over, 13 hold it for periods ranging from 3 to 30 hr. at temperatures of 150 to 208° F. without stabilizers, two did not specify holding time and temperature, and two cited experience with stabilizers.

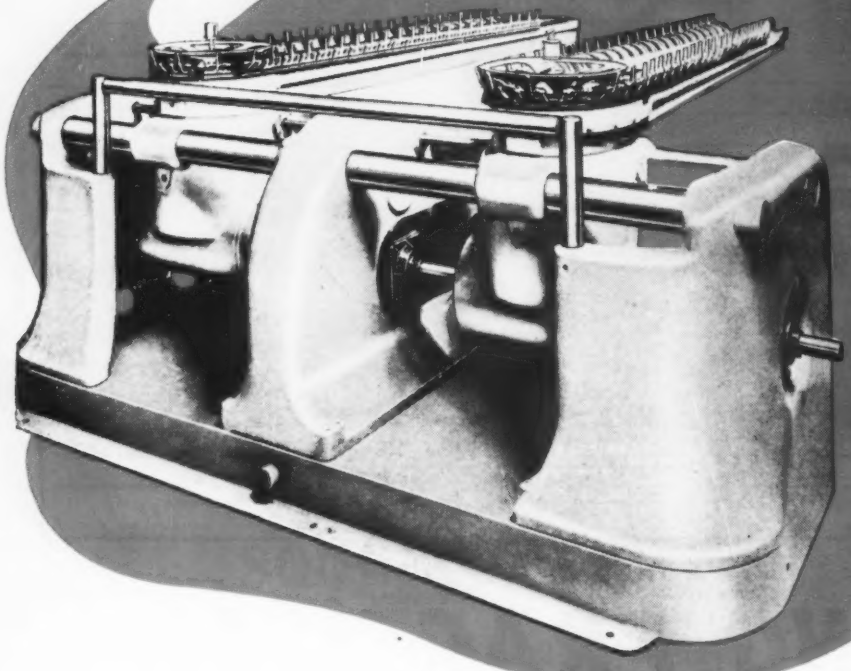
Mill No. 14 wrote: "Where size has been held over for as long as 48 hr., we have at times used a small percentage of formaldehyde (as a preservative). No tests were made, but the results were satisfactory. We recommend holding size no more than 30 min. if practicable. Size held over for several hours should not be agitated."

Mill No. 18: "We have not adopted a starch stabilizer for our size mix but will give a report of a recent test made by our laboratory.

"One mix was made without any additional material. To another mix was added 2% (of the dry-starch content) starch stabilizer. Both these mixes were cooked and stirred continuously for 2 hr. at a temperature of 211° F. At the end of the cooking, the viscosity of each mix was determined; both mixes were allowed to stand over night, after which they were heated again to 211° F. and held at that temperature for 10 min. The viscosities were again determined.

"The mix without the stabilizer would not form a smooth liquor, for the lumps would not dissolve although considerable stirring was done in an effort to break them up. The mix containing the stabilizer, although being solid after standing over night, stirred into a smooth paste. The viscosity,

The FASTER TENTER with LONGER LIFE



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The famous dependability and high-speed capability of Winsor & Jerauld tenters are jealously retained in the new model, which offers many important and carefully engineered advances, including:

1. Avoidance of lubricant spattering — attained by total enclosure of main driving gears and silent chain, by efficient guards on the entering and delivery end of the frame, and by patented enclosed sprocket-teeth holes in the tenter links themselves.

2. Saving of precious floor space by location of drive in center, as shown in the above photograph

3. Sturdy design of drive with mounting on internally-braced welded steel bed plate to insure permanent alignment of all parts.

4. Ample provision for endwise rail expansion caused by heat, an engineering improvement that prevents misalignment of bearings or gears, hitherto a common cause of mechanical failure in tenters.

Our service goes beyond the machine! During 47 years, we have successfully aided our customers in solving tentering problems on fabrics ranging from simple cotton print cloths to nylon marquisettes.

Have you a tentering problem? Write our experienced staff of tenter-engineering specialists for recommendations, involving no obligation.

Winsor & Jerauld

MANUFACTURING COMPANY, INC.

1268 EDDY STREET, PROVIDENCE, R. I.

however, was somewhat higher than it was when it was originally cooked."

REPORT STORAGE. Mills that hold size mixes in storage kettles reported as follows [Hr. = hours held in storage; R.p.m. = speed of agitating paddles during storage; Temp. = temperature at which size is stored]:

Mill No.	Hr.	R.p.m.	Temp. (° F.)
1	6—8	100	180
2	30	0	208
3	8	23	150
4	8	20	180
6	8	32	200
7	8	0	175
9	8	26	180+
11	3—4	46	204
12	8	0	180
13	8	22—25	206
15	8—12	0	——
22	8	20	208
23	8	Very slow	170
25	7	0	195—200.

Mill No. 15 wrote: "We hold our size over from 8 to 12 hr. but mix new size with it before it is used. We mix half new size and half held-over size."

Mill representatives who attended the meeting contributed the following information:

Crystal Springs Bleachery, Chickamauga, Ga.: We use our size as soon as possible after it is cooked, preferring that it stand no longer than 30 min. Unused size is kept over the weekend and used the following week. When size is stored for such a period of time, we use a small amount of formaldehyde in the storage kettle. Although no agitation is done during the hold-over period, we do slowly agitate a new size mix until it is used.

Muscogee Mfg. Co., Columbus, Ga.; We store size for as long as 30 hr. No stabilizer is used in the stored mix. At the beginning of the hold-over period, the temperature of the size mix is 206° F. At the end of a 30-hr. period, the temperature may be as low as 160°.

THIN SIZE. Another mill reported: We find that size is too thin after a week-end hold over. Viscosity and density tests have shown that the addition of 40 lb. of starch to the mix will correct the thinness. The size is stored at 200° F., and no agitation is carried out during this period.

Bibb Mfg. Co., Columbus, Ga.: Eight hours is the maximum time that we store size. This storage is carried out at 180° F. without agitation. Little change in viscosity has been noted. However, we keep as little size stored as possible and mix new size with the old before the stored size is used.

B. W. Whorton, superintendent, The Dixie Cotton Mills, LaGrange, Go., who led the discussion: According to the reports sent in, the majority of mills seem to favor a maximum size-storage period of 8 hr.

Question No. 2. *What are the advantages of having variable-speed drives on slashers?*

***B. W. Whorton,** standing, superintendent, The Dixie Cotton Mills, LaGrange, Ga., led the T.O.E. discussion on slashing.*

Fifteen mills sent in written answers to this question. None of the mills reported unsatisfactory performance of the drives. The advantages pointed out were:

1. Increased production (reported by seven of the 15 mills);
2. The ability to run heavy or light sets of yarn (three mills);
3. Uniform moisture content (nine mills);
4. Ease of changing styles of warp (three mills);
5. Easy starting and stopping of slasher, thus reducing the tendency of the yarn to kink or break (three mills);
6. Uniform tension and better control of stretch (seven mills);
7. Less slasher maintenance than the old friction drive (two mills).

Mill No. 4 wrote: "We have one slasher equipped with a Brown Moist-O-Graph control and a Reeves variable-speed drive. We hold our regain at 8.5% and depend entirely upon the Moist-O-Graph to regulate the speed.

"One advantage we get from the variable-speed drive is that in changing from one style to another we get

(*Continued on page 236*)

T.O.E. Elects New Officers

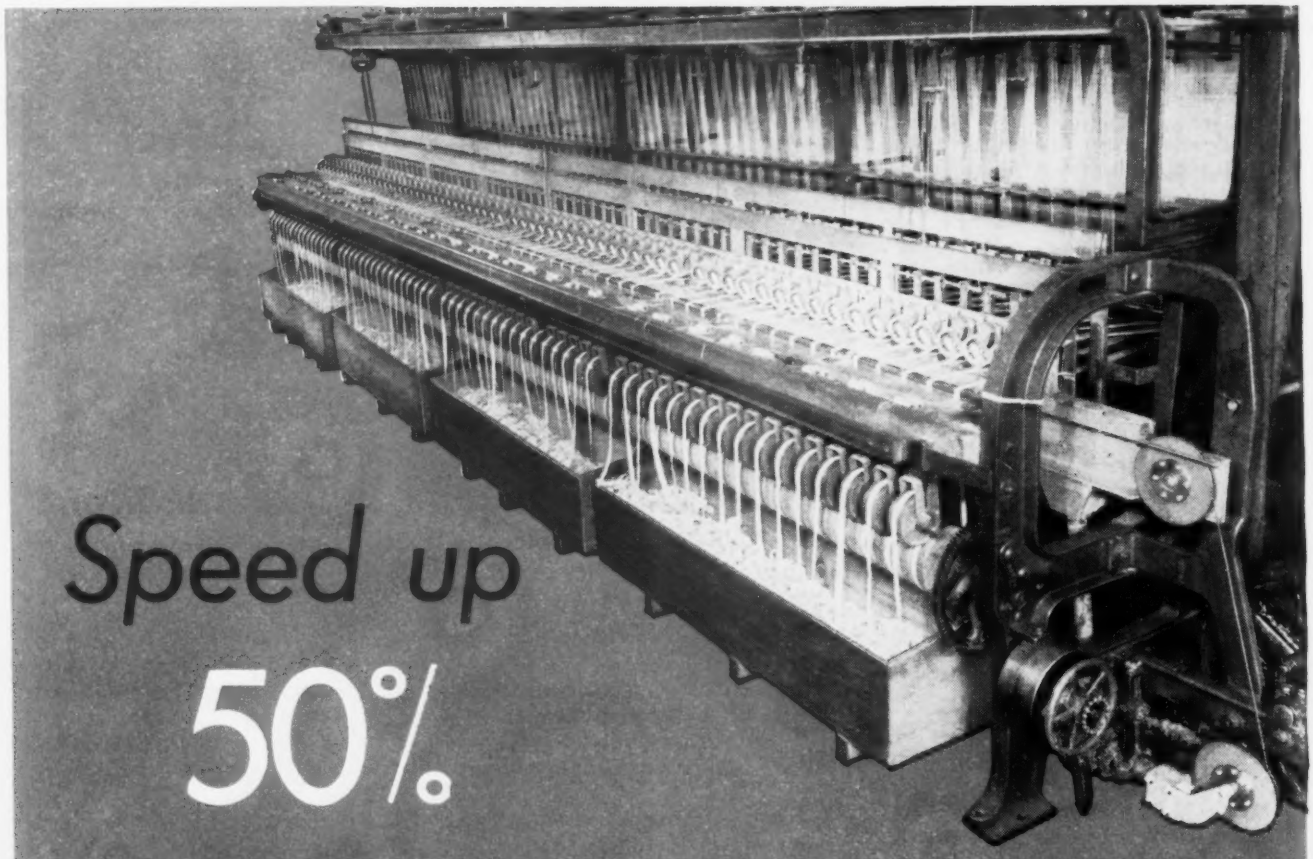
Officers elected at the fall meeting of the Textile Operating Executives of Georgia were:

R. P. Hardeman, center, asst. general manager, gray mill, Riegel Textile Corp., Trion, general chairman, succeeding J. L. Jennings, vice president in charge of production, West Point Mfg. Co., West Point.

J. C. Edwards, Jr. left, superintendent, Exposition Cotton Mills Co., Atlanta, vice general chairman, succeeding Mr. Hardeman.

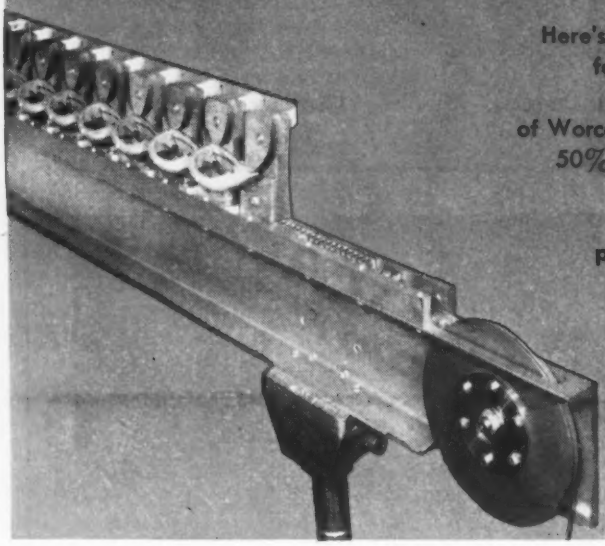
Robert W. Philip, right, vice president, Callaway Mills, LaGrange, re-elected secretary-treasurer.

R. J. McCamy, not shown, Pepperell Mfg. Co., Lindale Div., Lindale, member of the executive committee for 2½ yr., succeeding Mr. Edwards.



Speed up 50%

with Magnesium Lightness



Here's what *MAGNESIUM LIGHTNESS* does in a narrow fabric lay beam, developed for United Elastic Corporation by the Crompton & Knowles Loom Works, of Worcester, Massachusetts. It increases speeds—up to 50%, because the magnesium beam weighs less than the wood beam previously used. It reduces power costs, because high speeds are achieved with the same rated power used previously. And it *BOOSTS PRODUCTION.*

MAGNESIUM SAVED 116 POUNDS!

This magnesium lay beam, operating in one of the United Elastic Corporation's elastic web mills, is an extruded 5 inch channel section, 21½ feet long and weighs only 64 pounds, whereas the wood beam previously used weighed 180 pounds. The magnesium lay beam carries 64 shuttles, with blocks supported by magnesium castings and a magnesium rail.

—you'll buy Magnesium Lightness *too!*

Dow, pioneer producer of magnesium, supplies ingots, castings and wrought products in all forms. Consult Dow on the application of this lightest of structural metals to textile machinery and equipment.

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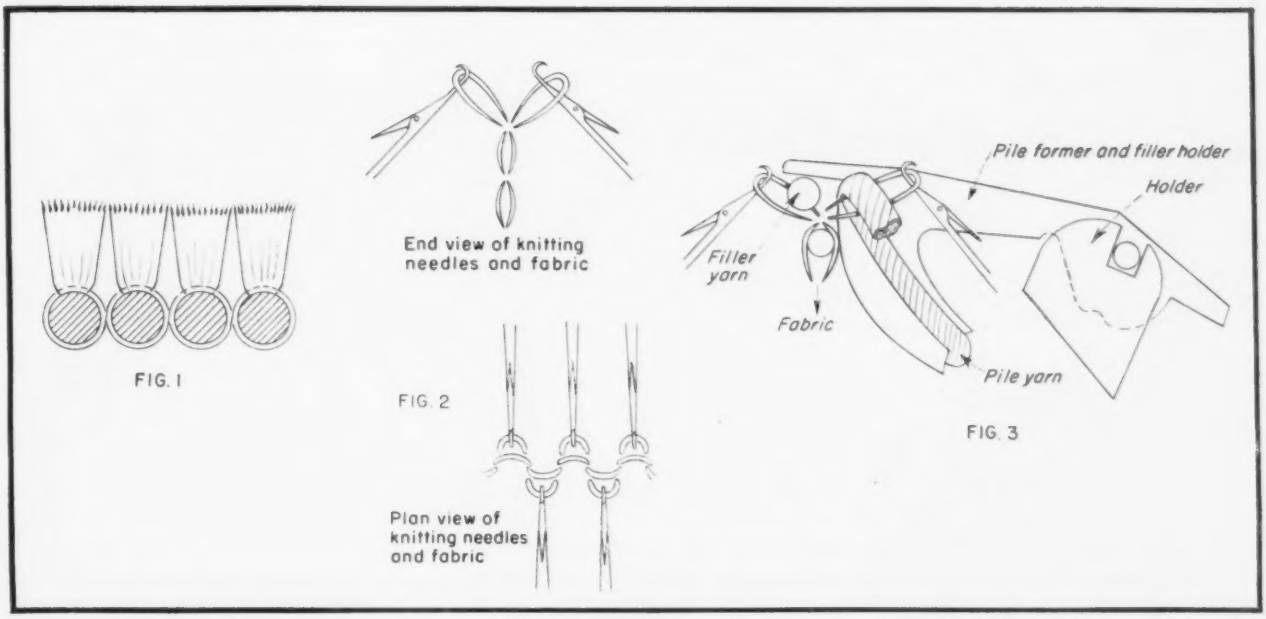


FIG. 1

FIG. 2

FIG. 3

Fig. 1. *Diagram shows basic construction of knitted carpeting.*

Fig. 2. *Needles are shown at work on fabric formation.*

Fig. 3. *Pile-former hook lays pile yarn over needle loops and holds filler yarn in place.*

British Patent Covers PILE CARPET Knitting

HIGHLIGHTS: *New technique results in a non-elastic pile fabric with suitable pile and filling yarn held together by a knitted structure—Polyvinyl acetate used to set pile and bind the knitted loops—Flat knitting machine can be adapted for this production.*

By HARRY WIGNALL, *Leicester College of Technology, Leicester, England*

A NEW PILE-KNITTED STRUCTURE suitable for many textile purposes where a firm non-elastic fabric is required with a cut or uncut pile surface is described in provision specification filed this year in the British Patent Office. "Its chief object is a rug or carpet fabric, produced in the main by a process of knitting, and a knitting machine for manufacturing such fabric. In this connection, it may be mentioned that the production of fabric is comparatively rapid as compared with weaving; and it is intended to take advantage of this rapidity in the production of carpets and the like. Furthermore, knitting machines are less restricted in their width than are looms for pile fabrics; and the present invention, therefore, takes advantage of this rapidity in the production of greater widths than are normally produced."

In this way, the patent sets out the claims of a new structure for producing carpets and rugs. The new structure provides a pile fabric consisting of a base knitted structure and a laid-in, pile-forming filling yarn retained by the knitted loops and protruding from the structure as a cut or uncut pile as is shown in Fig. 1. A filler yarn composed of jute makes the supporting fabric structure stiff and firm, and prevents curling, elasticity, or contraction. The filler yarn passes through an aqueous dispersion of polyvinyl acetate containing approximately 50% by weight of solid material and free from plasticizer. This is applied in a special manner during yarn feeding. It sets rapidly and thus gives extra firmness to the fabric, fixing the pile and binding the knitted loops.

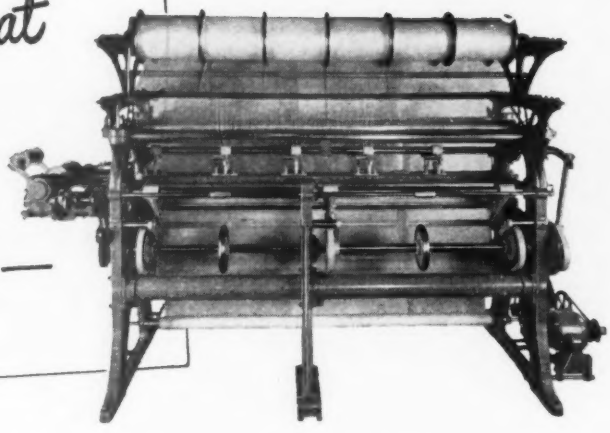
The process is being developed in such a manner as to render the conversion of present-day standard knitting machines a simple matter. Any flat-bar, latch-needle, rib-knitting machine, for example, can rapidly be converted to produce plain rug material with little alteration.

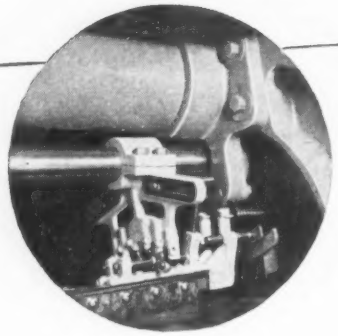
The sketches in Fig. 2 show the simple layout of needles in two inclined beds for producing a normal 1x1 rib fabric. In this case the needles rise alternately, take the new yarn, and move downward to draw the new loop through the old and cast off the old loop.

The attachment for drawing the pile is shown in Fig. 3. This pile former is situated between each needle and can rise so that its lower hook is clear of the bed. When it is in this position, the cam carriage is preceded by the pile-yarn carrier which feeds the pile yarn into the pile-former hook which is actuated by cams situated at the head of the cam carriage and swings downward to form the pile over the needle loops. Before the pile former has reached the position shown in Fig. 3, the filler yarn has been fed into the upper hook and is held down firmly while the needles rise and knit in the normal manner.

The feeding elements need to be modified, pile formers can be made from pressings, a small bed for pile formers has to be fitted, and three cams attached to the head of the cam carriage. A normal 7-needles-per-inch flat knitting machine can thus be adapted to produce a fabric having 60 tufts per sq. in. and weighing approximately 1 lb. per sq. yd.

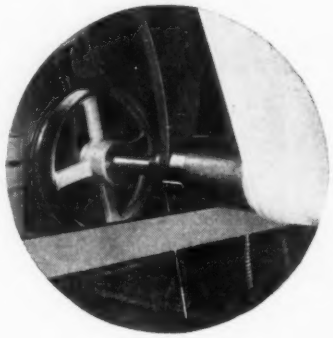
Three of the features that make the Kidde Knitter the leader in Raschel-type machines—

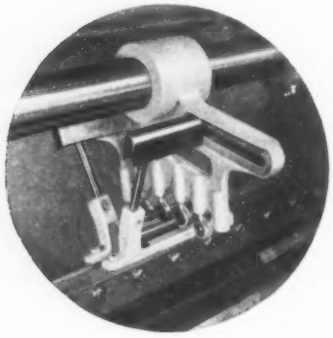




Guide Bar Assembly. On the *Kidde* Knitter, guide bar assembly can be raised or lowered as a unit by loosening four bolts that hold assembly to end frames and setting adjusting screws. Assembly is hung on supporting tube 6" in diameter, with ½" walls, assuring absolute rigidity under all conditions of load and speed. Swing bar is made of 1-15/16" diameter steel shafting to prevent torsion.

Cloth Roller. By simply removing a single bolt on each end, the cloth roller is released and rolls out from under the machine on a track. An empty roller can be quickly inserted so that down time is at a minimum. On double needle bar machines, where a front leg is supplied, the leg is hinged to permit removal of the cloth roller.





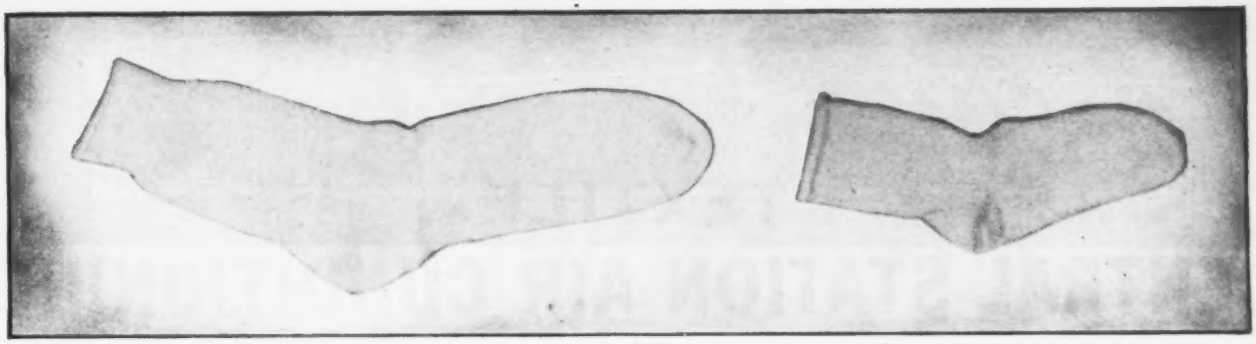
Guide Bar Hangers. Six guide bar hangers provide six-point suspension on guide bars and assure rigidity. Up to six guide bars may be used — each may be adjusted individually. Guide Bars are supported in the hangers by self-aligning bearings — torsion rods are provided at each of these six points to maintain guide needle alignment even with tightly stretched elastic yarn.

These are just three among the many reasons why practical Raschel men recognize the *Kidde* Knitter as the last word in warp-knitting machines. Exceptional accessibility, wide versatility, high sustained operating speeds — these advantages make the *Kidde* Knitter outstanding!

Write for descriptive literature—or better still, see for yourself what the *Kidde* Knitter can do. A machine is in operation at our Bloomfield plant—we'll be glad to arrange a demonstration. Just write for an appointment.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY



***A wet-chlorination-treated sock** (left) and an untreated sock (right). Both socks received the same laundering, and both were originally the same size.*

Wool Made Shrink-Resistant By Improved CHLORINATION

***HIGHLIGHTS:** Improved application of old method does not damage fiber—Level-dyeing properties and hand unimpaired—Sodium sulphamate slows release of chlorine from bath—Application of acid and alkaline processes described.*

By LEONARD SHAPIRO, *Textile Research Director, Alrose Chemical Co.*

OF THE MANY chemical processes which have been introduced for wool shrinkage control, wet chlorination, with improved methods of control, is now coming back into favor. Of particular importance recently has been the development of the Protonized[1] shrinkage-control process. Two processes are available[2], an acid process and an alkaline process.

The alkaline process has the advantage of imparting extremely soft hand, excellent strength and abrasion resistance, and level dyeing properties to the wool at very low cost.

The acid process has the added advantage of producing a very white wool without further bleaching; but it requires more chlorine and, owing to the addition of a sulphamate "buffer," is somewhat higher in cost.

Both processes are in commercial use at present, and are applied at any convenient stage of processing—usually just before dyeing—on piece goods, yarn, or top. The application of the process to yarn makes it possible to knit vari-colored materials, such as argyle socks, directly from shrink-resistant yarns. Sweaters, which are not normally wet-processed after knitting, can also be made from dyed yarns treated by the wet-chlorination process.

The recent commercial production of shrink-resistant worsted yarn on packages is the first successful application of this process on a package machine, and opens up many new possibilities.

CHLORINATING BATH. Commercial soda bleach, the most widely used source of chlorine, is obtained by bubbling chlorine into a cold caustic-soda solution. The reaction is an equilibrium, readily reversed by addition of acid:

$$Cl_2 + 2NaOH \rightleftarrows NaOCl + NaCl + H_2O$$

Soda bleach loses chlorine slowly at room temperature at a rate of about 0.075% per day. It should therefore always be analyzed for available chlorine before use. Calcium hypochlorite, a powdered, commercially available material containing 70% "available chlorine," is also a convenient source of chlorine for rendering wool resistant to felting. It is stable to storage, and the chlorine content shows only a slight change after standing several months under favorable conditions.

The chlorine in soda bleach (sodium hypochlorite), or calcium hypochlorite, exists in different chemical forms depending on the pH of the solution. At a pH above 9.0 it exists solely as hypochlorite ions (OCl^-). At a pH of about 5.5 it is all in the form of hypochlorous acid, HOCl. At a pH of 2.0 the chlorine is completely liberated as nascent chlorine, unless it is bound by other compounds in the chlorinating bath.

The chemistry of chlorinating baths is complicated by the fact that hypochlorite may show a number of different types of reactions. In relatively neutral solutions, hypochlorous acid acts as an oxidizing agent, liberating oxygen at a rate dependent on temperature and catalysts present:

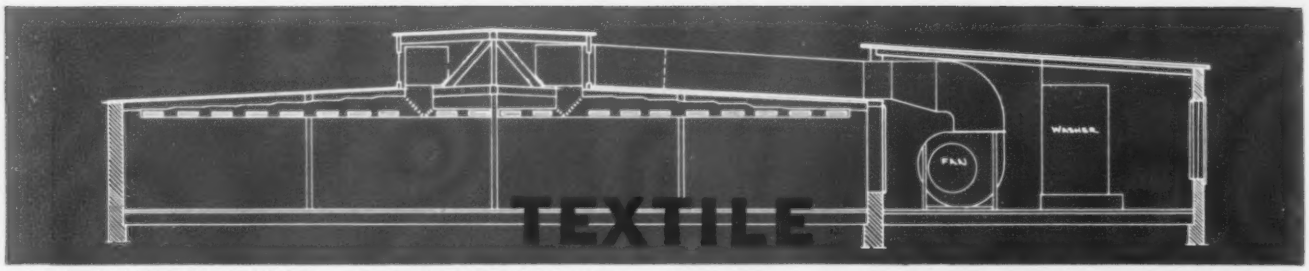
$$2HOCl \rightarrow O_2 + 2HCl$$

Because of this conversion of the weak hypochlorous acid (HOCl) into the very strong hydrochloric acid (HCl), the chlorinating bath becomes more acid during the oxidation reaction. In strongly acid solutions, nascent chlorine is liberated.

$$HOCl + HCl \rightleftarrows 2Cl + H_2O$$

Under such conditions, direct chlorination may occur, particularly in the presence of catalysts. Chloramines may form with the nitrogen atoms in the wool, and the stability of these compounds varies widely depending on their structure. Oxidation or chlorination of other reagents present in the bath may complicate the reaction still further.

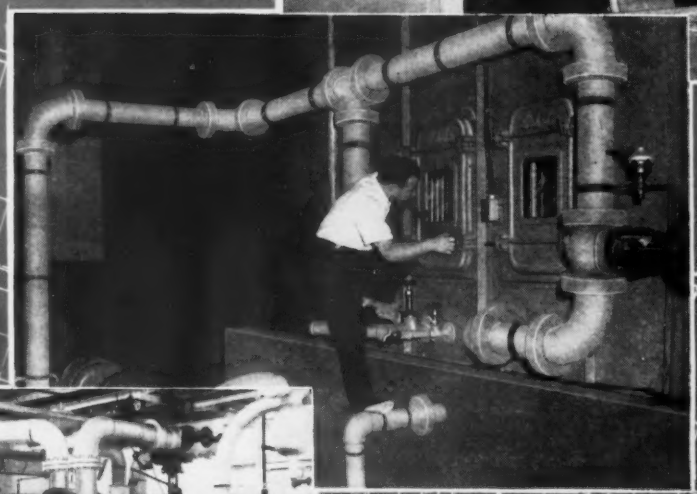
STABILIZATION. The rapidity with which chlorine is released from acidified hypochlorite baths is undoubtedly the cause of many of the difficulties in applying hypochlorite-acid processes in the past. Much of the chlorine is lost to the atmosphere, making it difficult



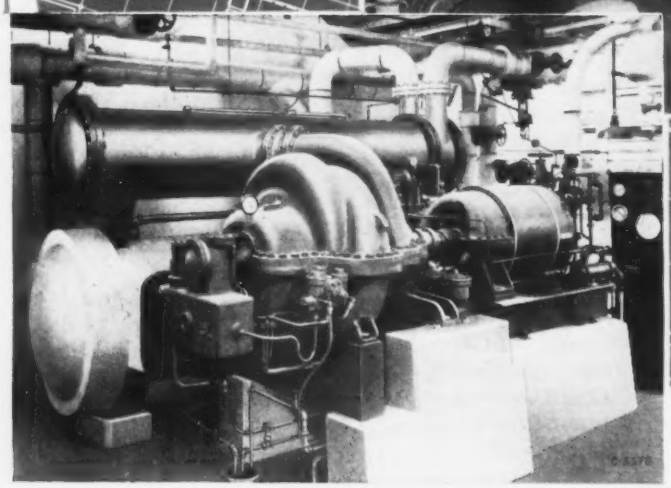
CENTRAL STATION AIR CONDITIONING

by Bahnson

Whether a large capacity installation or one of moderate size, the Bahnson Central Station System can be tailored to specifications required and designed for humidifying, heating, cooling, dehumidifying, air filtering, and ventilation—automatically controlled.



Bahnson Air Washers in central station installation handling 275,000 cubic feet of air per minute.



Worthington refrigerating compressor, combined with Bahnson Central Station Air Conditioning System, provides absolute temperature and humidity control regardless of outdoor weather conditions.

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to reproduce results or to determine the amount of chlorine which reacts with the wool. The chlorine fumes are also very irritating to the operators.

In order to overcome these difficulties, the chlorinating bath must be controlled so as to liberate chlorine more slowly under controlled conditions which do not damage the wool. Satisfactory results can be obtained by careful control of the pH of the bath, temperature, concentration, and rate of addition. In many cases, however, the wool is yellowed and the felting-resistance is not adequate.

ACID PROCESS. The problem of obtaining uniform acid chlorination with no yellowing has been solved by the use of certain sodium chlor-sulphamates in acid solution. When hypochlorite is added to sodium sulphamate, chlor-sulphamates are formed:

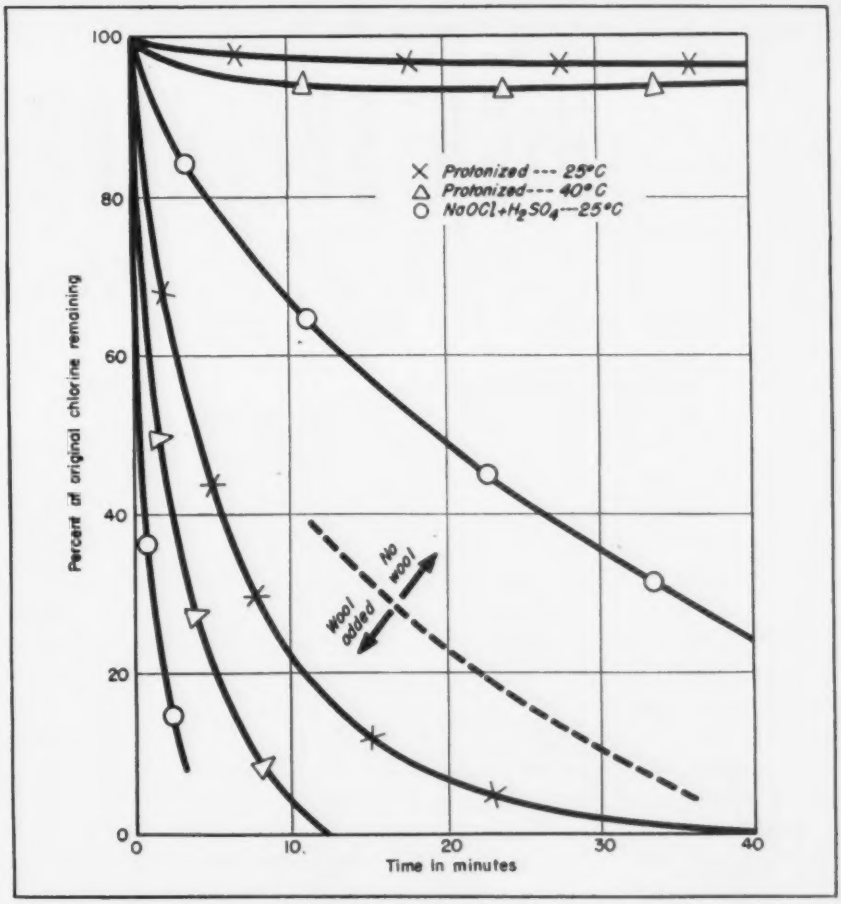
$$2NH_2SO_3Na + 3HOCl \rightarrow \begin{matrix} Cl \\ H \end{matrix}\!\!\diagdown\!\!\diagup N - SO_3Na + \begin{matrix} Cl \\ Cl \end{matrix}\!\!\diagdown\!\!\diagup N - SO_3Na + 3H_2O$$

At a pH below 2 the chlor-sulphamate solution is quite stable in the absence of wool. When wool is entered into the solution at room temperature the chlorine reacts slowly and uniformly. The reaction is accelerated at higher temperature.

In the chart on this page, the upper curves illustrate the stability of such chlorinating baths at 25° C. (77° F.) and 40° C. (104° F.) in absence of wool fibers. Titrations show no appreciable loss in available chlorine over a period of 40 min. at either temperature when sodium sulphamate is present in the bath. By contrast, the older-type acidified hypochlorite bath shows rapid loss in chlorine.

The lower set of curves shows that after wool is entered into the chlorinating bath the acidified hypochlorite bath is almost completely exhausted in 2 or 3 minutes, and is uncontrollable by comparison with the special chlor-sulphamate bath which is exhausted at a uniform rate in about 15 to 20 min. (depending on the type of wool). The exhaustion rate is greater at 40° C.; and this effect is used to advantage in some cases by chlorinating 10 min. at room temperature to exhaust most of the chlorine, and then raising the temperature to obtain 95% to 98% exhaustion in a reasonable time.

The curves show that the rate at which chlorine is removed from the bath by the wool is approximately proportional to the amount of chlorine remaining in solution. Where a short chlorinating time is desired, it is possible to stop the chlorination before complete exhaustion takes place. Thus, after 5 min. at 40° C. or 10 min. at 25° C., 80% of the chlorine is exhausted. If 20% excess chlorine was added at the start, the bath could be dropped at this point. While this method requires closer chemical control, it is used in some applications to reduce the time required for chlorination.



***The presence of sodium sulphamate** increases the stability of acidified hypochlorite bath and retards the release of chlorine.*

Addition of a little formaldehyde to the chlorinating bath helps to maintain satisfactory hand and strength.

After exhaustion of chlorine, the wool is antichlored with sodium bisulphite and neutralized with sodium bicarbonate.

The amount of chlorine required depends on the grade and type of wool, and on the yarn and fabric construction. For coarser woolen materials, 3% chlorine based on the weight of wool is usually adequate. For fine, high-quality worsteds, a larger amount of chlorine (4% or more) is frequently required. The minimum quantity required for any particular material must be determined experimentally. It is interesting to note that wool treated with too little chlorine often exhibits no noticeable increase in felting-resistance—hence, the importance of using no less than the predetermined minimum quantity of chlorine. On the other hand, too great an excess can cause serious damage.

APPLICATION. Wool is treated by the wet chlorination process in the form of top, yarn in packages or skeins, knitted piece goods, hosiery, etc. Other fibers are unaffected and socks with elastic tops, cotton heels and toes, and acetate wrap yarns have been processed successfully.

Processing equipment for application of the process must be of acid-resistant and chlorine-resistant construction. Wool, stainless steel, and nickel-clad steels are among the preferred materials. Copper or iron must not come in contact with the liquor or with the wool at any point, since serious discoloration can result.

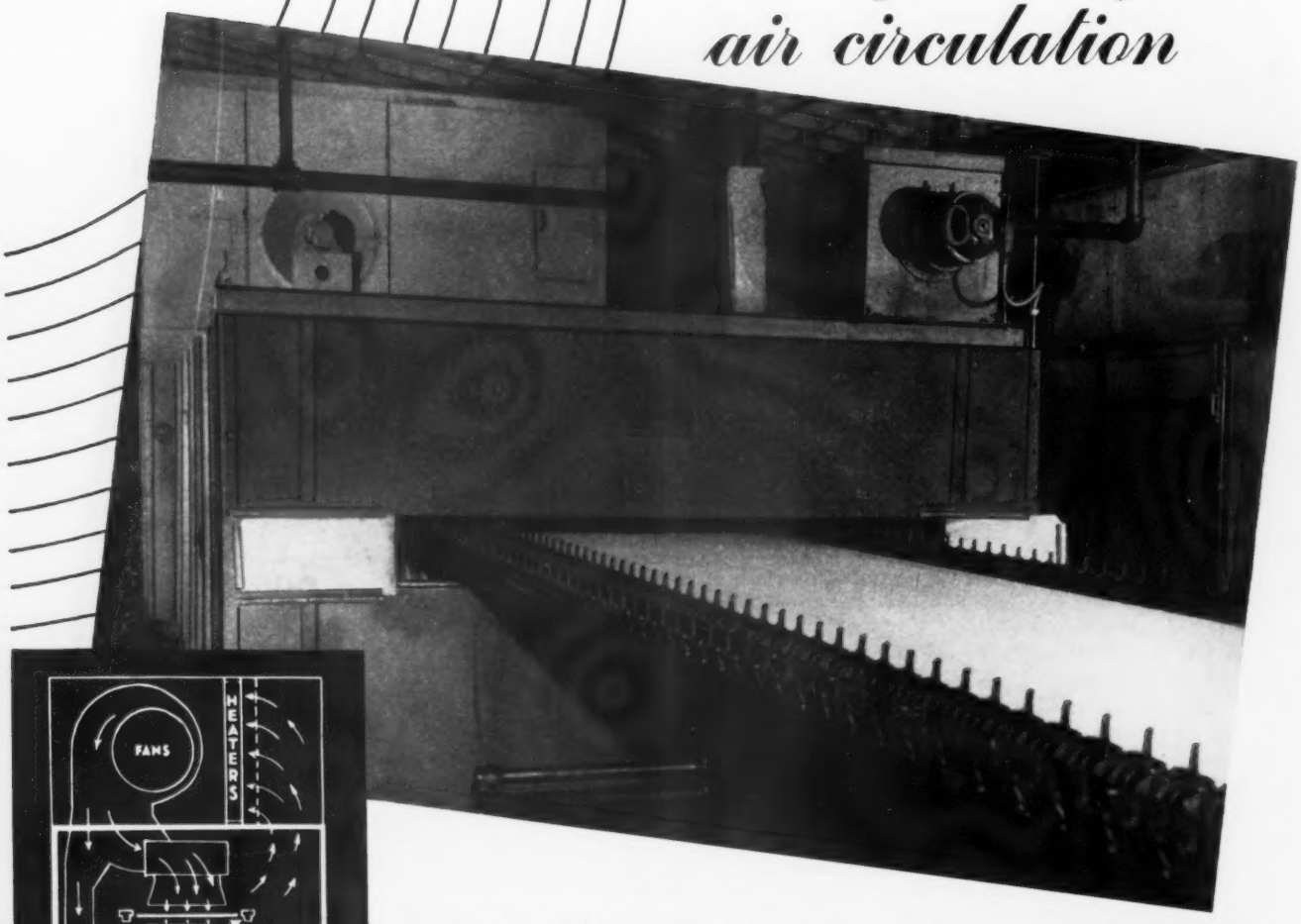
For yarns or tops a stainless-steel Franklin Process or spindle-type machine is used. For hosiery, the paddle-type dye machine or rotary machine is preferable. For piece goods, a stainless-steel dye beck can be employed. For yarn in skeins, the Hussong-type machine is suitable.

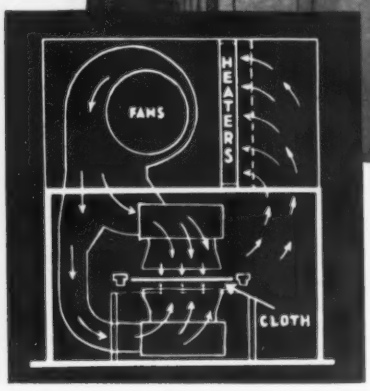
While the exact procedure and formulation varies, depending on the material to be processed and the equipment available, the following is a typical procedure used for application of the acid process to worsted hose in a rotary or paddle-type machine.

(Continued on page 210)

HIGH SPEED DRYING

through unique air circulation





PROCTOR *Super-Speed* SYSTEM *Applied to* SINGLE RUN TENTERS

The factor which contributes most to the high speed operation that is possible with this modern system of tentering is air circulation. When a single run tenter is enclosed in a Proctor housing, air at high temperature is impinged through nozzles against both sides of the fabric as it is carried through the drying chambers. Circulating through the goods, this penetration of uniformly heated air reduces drying time and increases output. The proper regulation of moisture in the air, so as to obtain speedy drying without harsh effects on the cloth, has an important bearing on the quality of the finished goods. Of course, output varies with individual plant requirements, length of the machine and the character and weight of the goods—but is always kept to a maximum by this system. Temperatures, air velocity and drying speed may be altered to suit a wide variety of fabrics and finishes. After considerable engineering and development work, this system represents the maximum in the efficient use of horse-power, and making possible decreased drying costs. One of the most recent applications for this system has been in the drying of fabrics preparatory to curing. If the finishing of fabrics which must be held to width is part of your plant operation—investigate the decided advantages of the Proctor "Super-Speed" System applied to single run tenters.

PROCTOR & SCHWARTZ, INC.
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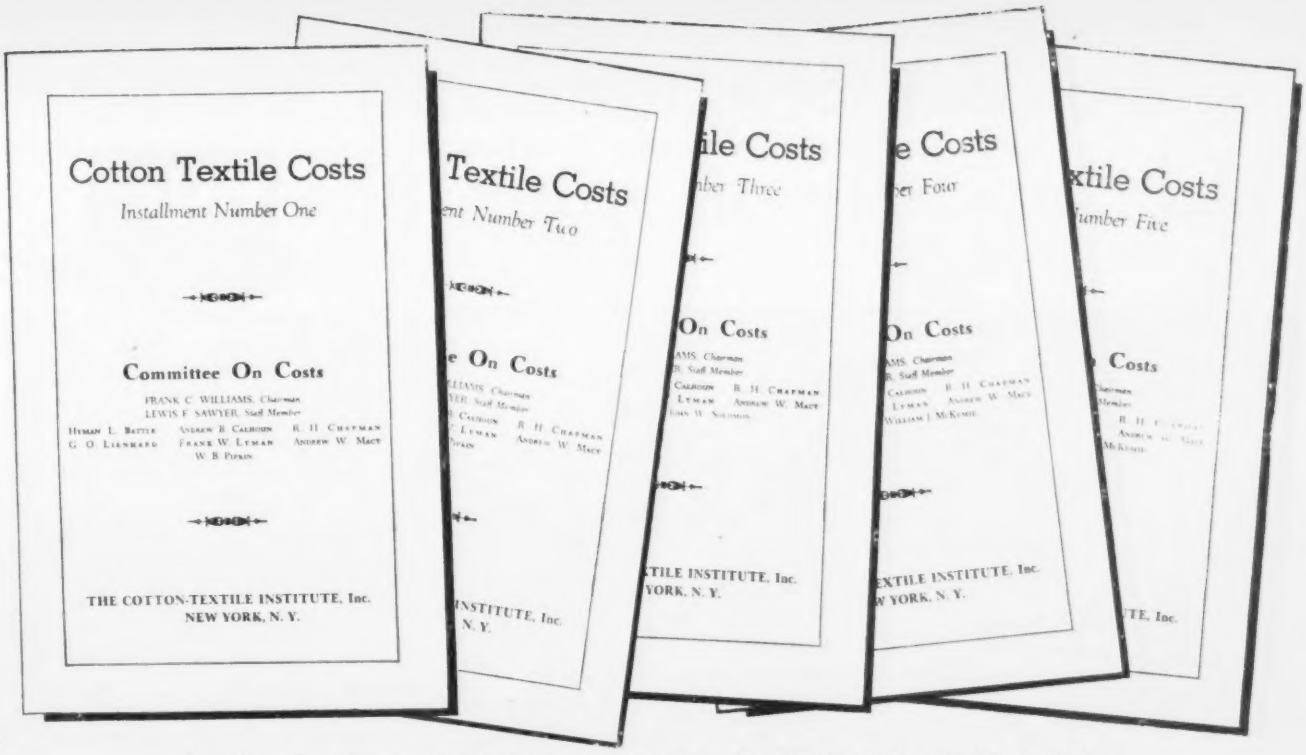


A series of cost manuals has been prepared for mills by the Cotton-Textile Institute

COST KNOWLEDGE Is Vital In Growth Toward Efficiency

By LEWIS F. SAWYER, *Staff Member, Cost Committee, Cotton-Textile Institute*

ONLY 10% OF THE MILLS interviewed in a cost survey by the Cotton-Textile Institute just after its organization in 1926 were following reasonably effective cost practices. Because the institute's charter members believed that application of modern cost methods would do more than any other single thing to strengthen both the manufacturing and marketing divisions of the textile industry, a campaign was launched to focus attention on the necessity for accurate predetermination of costs as an aid toward efficient manufacturing and a guide toward sound sales policies. As a result of this campaign, which was aided and supported by professional cost engineers and prominent mill men, a general consciousness of the value of modern cost methods was generated and the majority of mills adopted the methods recommended.

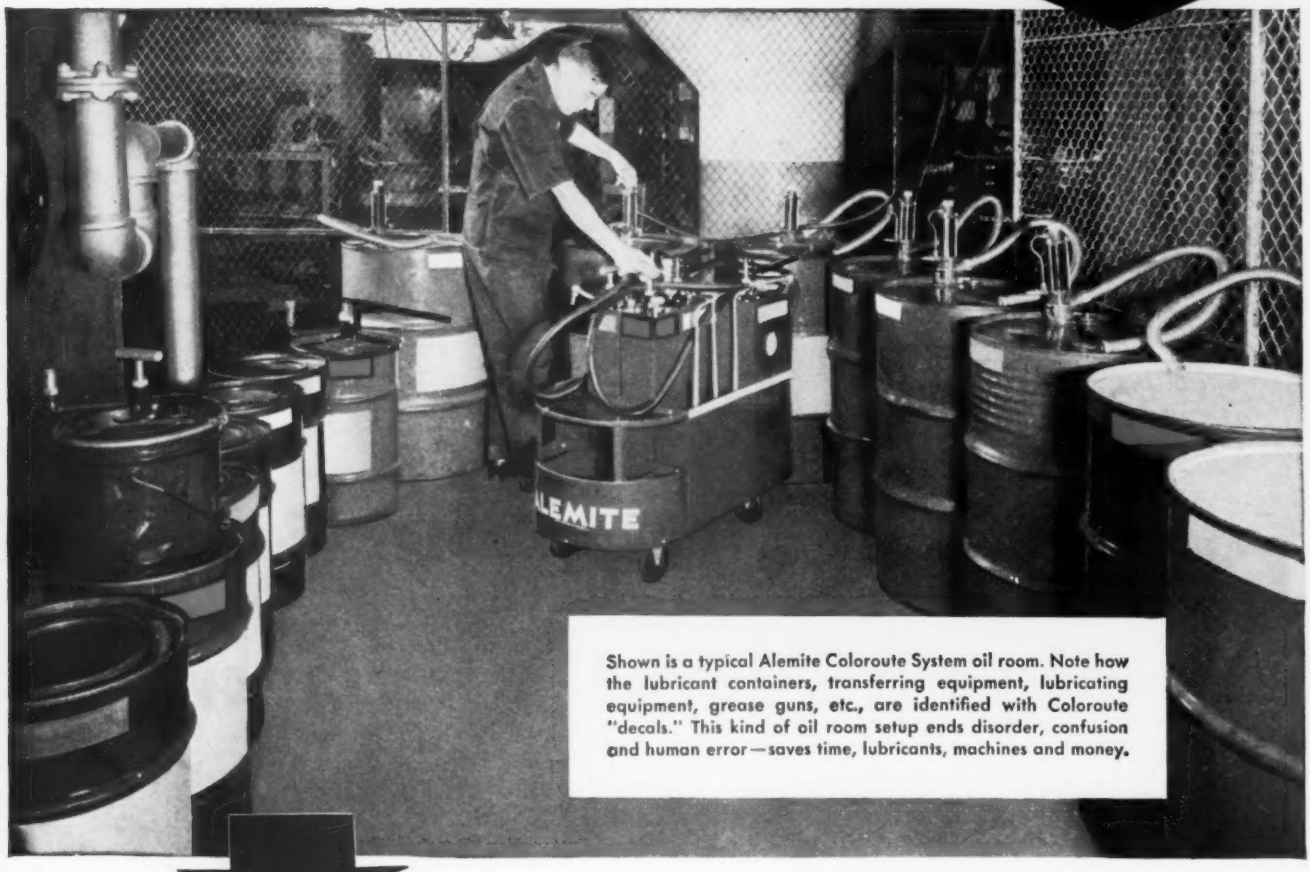
FALSE PREMISES. For a time, however, some mill men persisted in the belief that prices on cotton textiles were determined by economic factors beyond the control of producers and that cost knowledge was of little value for marketing purposes. Other mill men believed that detailed costs were not necessary for them so long as the wages they were paying were lower than those paid by their competitors. Still others clung to the belief that continuous round-the-clock operation, regardless of market conditions, was all that was required and that cost methods need be nothing more than cursory.

The profit record of the industry during the period when these ideas held sway was frankly miserable, so much so that the industry at large was generally reputed to be inefficient, tradition-bound, and depressed. While it would be ridiculous to attribute this plight wholly to lack of effective cost methods, that lack certainly constituted one of the major factors responsible for the discouraging conditions. Other factors were the excessive spindleage operated on multiple shifts and the increasing surpluses of cotton with accompanying breaks in market prices. Before the outbreak of World War II, much of that excess spindleage was liquidated, and the industry entered the conflict in a well-balanced position; furthermore, the war-emergency needs removed the surpluses of cot-

(*Continued on page 202*)

HIGHLIGHTS: *Only 10% of mills in 1926 had adequate cost methods and only 50% in 1946—Predetermining costs is an engineering project and constant check gives chance to control cost—Cost-conscious mills have been efficient mills—Trend toward a post-war norm is opportunity for many to improve cost practices.*

Good Lubrication starts with an orderly oil room like this



Shown is a typical Alemite Coloroute System oil room. Note how the lubricant containers, transferring equipment, lubricating equipment, grease guns, etc., are identified with Coloroute "decals." This kind of oil room setup ends disorder, confusion and human error—saves time, lubricants, machines and money.

YOU CAN CUT PRODUCTION COSTS BY MODERNIZING YOUR OIL ROOM

For the price of a 3 cent stamp, you can have the kind of oil room that takes all the guess work out of lubrication. You'll know for sure that the right lubricant will go where it's supposed to—that you'll have a ship-shape lubrication job down to the last machine.

Here's all you do. Make a check on your oil room right now. Then, think how much more efficient a new arrangement would be—how much an identification system would help to eliminate errors. Tell us how many types of greases and oil you use—or the number of "decals" you want. Give us the approximate number of containers, lubricating equipment, guns and other items you use.

Here's what Alemite will do. Fill in the coupon with the full information. We will then send you the Coloroute "decals" you need along with suggestions on how to design and operate an orderly oil room.

You buy nothing. This is simply Alemite's way of helping industry cut production costs through improved lubrication.

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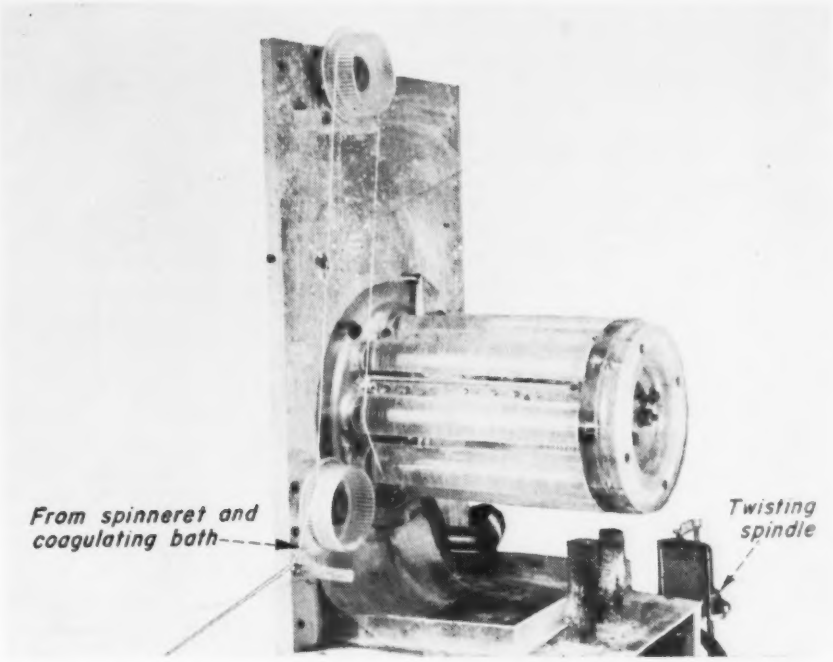
TEXTILE Equipment NEWS

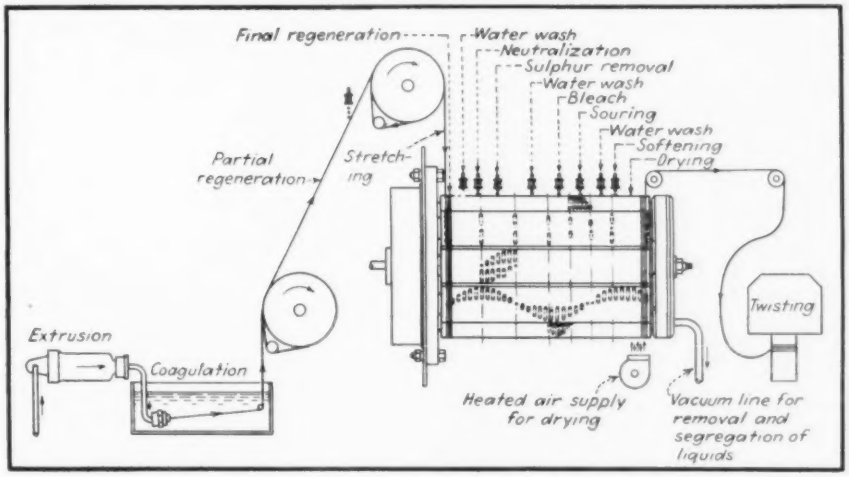
CONTINUOUS SPINNING

Of Rayon by New Process

HIGHLIGHTS: *Novel rollers, 16 in. long, perform ten processes—Liquids segregated and reclaimed by suction arrangement—Skew regulates travel of yarn—Suitable for viscose, cuprammonium, or wet-acetate rayon spinning.*



Unique rollers *are the heart of the Kuljian Process for continuous spinning of rayon. Yarn travels from the godet on the back of the machine to the front of the rollers where it is dried, and then to a twisting spindle.*



Ten aftertreating processes *are carried out on the skewed rollers following conventional spinning, coagulation, and accelerated regeneration.*

A NEW METHOD of spinning rayon continuously, developed by H. A. Kuljian, 1518 Walnut St., Philadelphia, Pa., utilizes an integrated machine that compacts most of the processes into a space 16 in. long. It promises considerable savings in floor space, investment cost, chemicals, and water for yarn from viscose or other similar processes.

A set of unique rollers is the heart of the new machine. On them, in a space of 16 in., ten processes are carried out. Nine of them are wet processes.

Three important elements are involved in the operation of the main part of the machine: (1) necessary liquids are fed to the rolls at a predetermined rate, (2) suction holes in the rollers prevent mixing of the liquid and draw off excess in such a way that solutions can be reclaimed as desired, and (3) a skewing of the rollers causes the yarn being treated to advance as slowly or as rapidly as may be desired.

There are other important features in the process, such as a method (preceding the rollers) to apply acid to the freshly spun yarn and a hot-air blast on the thread for drying. The multiple rollers hasten processing by tending repeatedly to press the liquid about the yarn as it touches the rollers and to impart a sucking action into the yarn as it leaves them. The ends of the rollers in the drying area can be tapered, if desired, for any percentage of shrinkage.

The rollers (8 on the machine illustrated) are hollow and have holes running from the surface to the center. These holes are so placed as to (1) prevent one solution from running into the next and (2) remove either all or some liquids for washing, or certain ones for reclaiming.

Liquids are metered to the rolls by small pipes. In addition, one pipe feeds acid to the yarn before it goes over the second godet wheel at the top of the machine. Another pipe, just above the first godet sucks off excess

acid as it counterflows down the yarn. A slotted tube is inserted inside each roller with the result that suction is applied to only one or two holes at a time. The accompanying drawing shows details of the apparatus.

Stretch is obtained between the godets and the multiple rollers since these elements are gear driven.

The photograph shows the lever (at the foot of the rolls) which is used to regulate skew and thus control the direction of the yarn travel and the number of wraps per inch. Once the desired number of wraps is obtained, the setting is locked by means of the bolts which can be seen in the recess in the front of the machine. The two pipes extending up from the table supply hot air for drying.

The machine shown was demonstrated running at 5 ft. per sec. for viscose yarn. It was reported that only 250 lb. of water is needed per pound of yarn, about 1/3 the amount for the processes now in use.

Slasher Announced By West Point

A new slasher which will handle a variety of cotton warps, from those for the lightest gauze to the heaviest sheeting, has been introduced by West Point Foundry & Machine Co., longtime makers of slasher equipment and other products.

Designed for better sizing, increased production, and lowered operating costs, the slashers are offered in two models—2 and 3 cylinders—with 3 types of creels and other optional equipment to meet the specific needs of various mills.

The 2-cylinder slasher is equipped with heavy copper or stainless-steel 7-ft. and 5-ft. insulated cylinders with bucket or syphon drains. All cylinder journals are in heavy-duty, anti-friction bearings; positive drive is optional. Hood work is of galvanized steel, copper, or stainless steel; and the heavy-duty blower has an individual motor drive.

Three types of creels, all equipped with anti-friction beam-journal bearings, are offered with this cotton slasher—horizontal, upright, and positive-drive White slasher creel.

The horizontal creel is built on a one-piece steel runner and allows placement of the beams horizontally at a low level where the operator can get to them easily. This creel assures accurate, constant alignment with cylinders. It is built with continuous-steel side rails and heavy beam stands with adjustable ball-bearing beam supports.

The upright creel saves floor space by allowing placement of section beams one above the other.

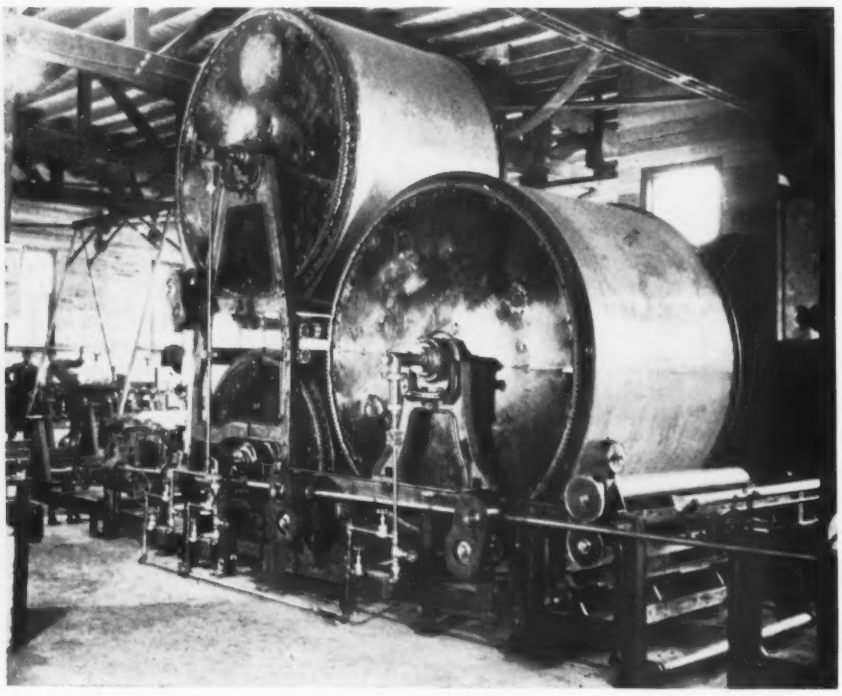
The positive-drive White slasher creel offers a number of advantages. The creel is positively driven by a selective-speed control, and the yarn is drawn from each beam at the same rate and delivered to the size vat free from tension, increasing size absorption.

The size box is built of heavy stainless steel, is plain or steam-jacketed. Each size box contains a ribbed or solid immersion roll and two heavy 9-in. size rolls. All rolls are either copper or stainless steel. The squeeze rolls are cast iron and can be covered with slasher felt or rubber. All rolls are mounted in tightly sealed anti-friction bearings. All boxes are equipped throughout with ball bearings, and mechanical squeeze-roll lifts for raising heavy squeeze rolls for washing or covering with wool blankets. This device holds the squeeze roll in correct alignment over the size roll and results in a more uniform size penetration. All boxes can be equipped with automatic level and temperature control. This size box can be equipped with a wool-winding device for covering the squeeze rolls with wool yarn in lieu of wool blanket or rubber.

When needed, a stretch-control assembly is placed behind the size box. This group of rolls draws the warp yarn from all the section beams and delivers it to the size box with the same tension. It can be set to maintain a definite amount of stretch.

Automatic steam-pressure controllers are standard equipment. As an extra, the slasher may be equipped with a moisture controller which measures the moisture content of the warp and, through a special control unit directly connected to a variable drive, slows down or speeds up the slasher if regain is too high or too low. Yardage counters and cut markers are furnished when specified.

The drive is placed in the frame of the head end of the machine and can be of any of the following types: standard cone-pulley drive, mechanical variable-speed and motor, multi-motor drive, or generator and a.c.-d.c. variable-speed motor and generator. Head ends are built in a standard width of 60 in. and in additions of 12 in. up to 120 in. wide. The beam is friction or motor-driven and can be arranged to take loom beams with heads up to 36 in. in diameter.

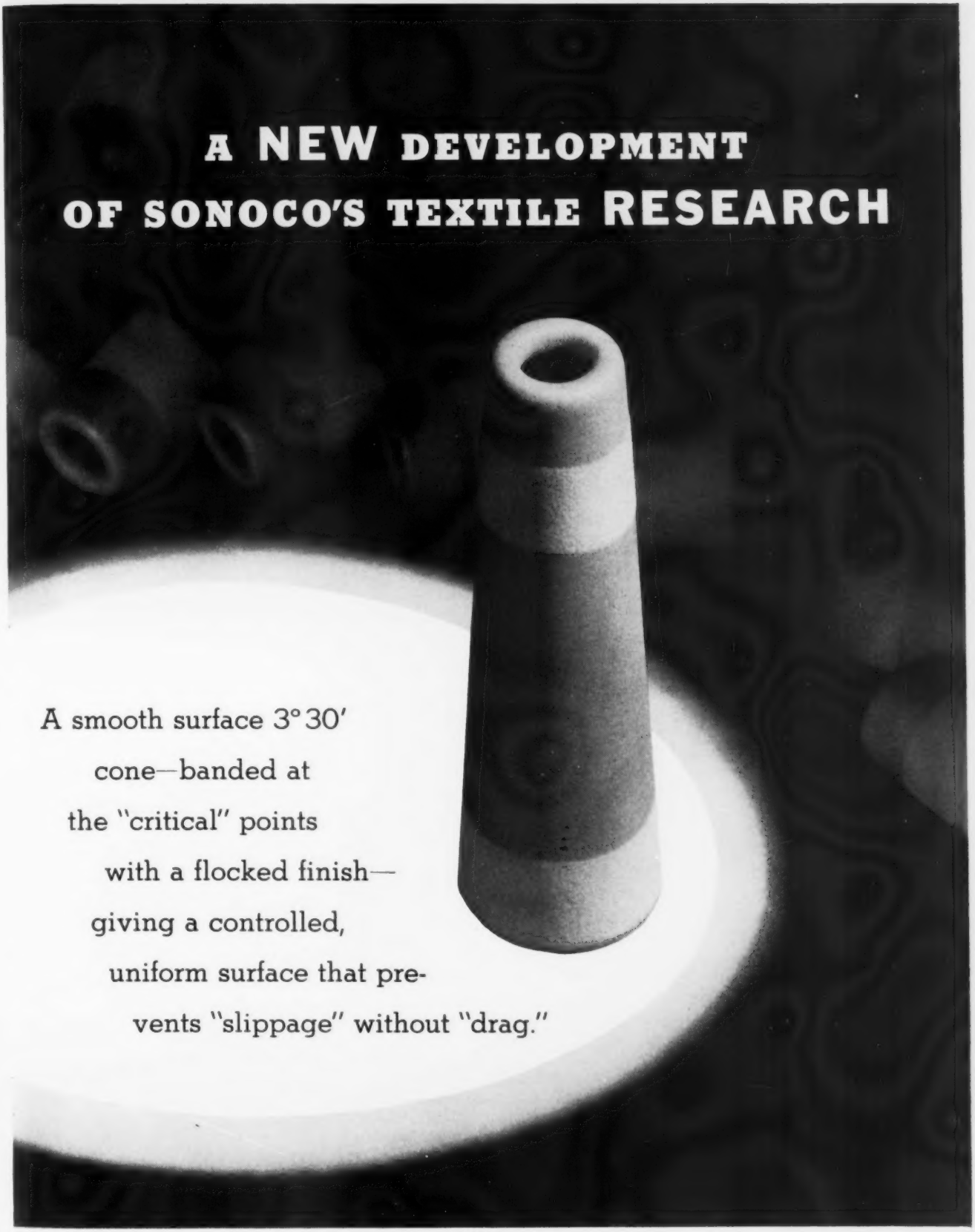


***New 3-cylinder slasher** is available with two 7-ft. and one 5-ft. cylinders (model shown) or two 5-ft. and one 7-ft. cylinders. (West Point)*

Rope Squeezer Has Adjustable Pressure

Latest addition to the line of finishing ranges made by Weisner-Rapp Co., Buffalo 11, N. Y., is a rope squeezer which has adjustable pneumatic pressure on the rubber rolls which is preset to meet varying pressure requirements. A conveniently located dial tells at a glance the pressure on the rolls. The roller bearing take-up units on the rubber squeeze roll nearest the pneumatic cylinders are mounted on rails to permit the entire roller assembly to ride back and forth according to the thickness of the cloth, at the same time exerting pressure. This particular feature provides "give," and in-

A NEW DEVELOPMENT OF SONOCO'S TEXTILE RESEARCH



A smooth surface 3° 30′ cone—banded at the "critical" points with a flocked finish—giving a controlled, uniform surface that prevents "slippage" without "drag."

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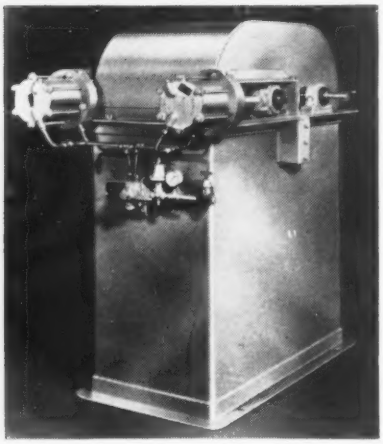


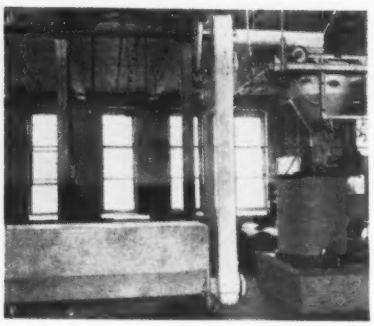
***Adjustable pneumatic pressure** on the squeeze rolls of this rope squeezer may be preset to meet varying cloth-finishing requirements. (Weisner-Rapp)*

creases the life of the rolls as the shock is taken by the pneumatic cylinders rather than the rubber.

The two squeeze rolls are located side by side instead of one on top of the other. By placing the rolls in this manner, liquid is squirted straight down into the tank and not over the surrounding floor and equipment. Both squeezer rolls are standard and interchangeable for quick, easy replacement.

The entire squeezer is of all-welded, stainless-steel construction except the pneumatic mechanism, providing smooth joints which are designed to eliminate possible catching and tearing of the material in process, and the possibility of staining the material. The squeezer requires a floor space of 53½ x 29½ in., and is 64 in. high.

Starch Handler Eliminates Waste



***Starch control and handling** unit is designed for saving labor and handling, and for elimination of starch waste.*

Accurate measuring and automatic handling of starch for size mixtures are enabled by a new automatic starch-control machine, according to F. W. Warrington, P. O. Box 4030, Elizabeth Sta., Charlotte, N. C., sole agent for the manufacturer, Champion Machinery Co.

Starch is stored in a wooden bin built to accommodate a week's supply or any other amount desired. A screw conveyor in the bottom of the bin carries the starch to a bucket elevator which raises it to another screw conveyor. The upper-level screw conveyor, built as long as desired, carries the starch to a weighing hopper. This hopper has mercury-controlled scales which may be set for the amount of starch needed. When this amount is in the hopper, the scale breaks the circuit and stops the machine. Only 55 sec. are required to elevate and deliver 135 lb. of starch into the hopper.

Savings are claimed from elimination of starch waste and manual handling. The slasher tender can devote more time to slashing, the human factor in weighing is eliminated, and a cleaner slasher room results.

Calculating Aids Devised by Viscose

***Four pocket-size calculating aids** useful to mill men are available from American Viscose Corp.*

Four calculating aids are being offered without charge to mill technicians, purchasing agents, and salesmen of textile mills, converting and finishing houses, by American Viscose Corp., 350 Fifth Avenue, New York 1, N. Y.

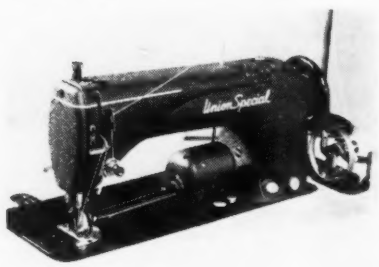
Most unusual is a little rule for calculating the warp and filling yarn requirements in 75, 100, 120, and 150 den. With it, a purchasing agent for a mill can quickly determine the poundage of warp and filling yarns needed to fill a yardage order, or the number of yards of cloth the mill can turn out from the poundage on hand. The warp scale runs from 100 to 10,000 ends, with 5% warp take-up included, and the filling scale from 20 to 100 picks per in., in steps of four picks.

The fabric-weight conversion table will enable salesmen and technicians trained on one processing system to determine quickly that what they may call a 10½-oz. fabric is the same weight as what a cotton man will call a 1.52-yd. fabric.

A denier conversion table permits technicians to convert quickly to their own weight systems almost any weight of rayon, as expressed in denier. A glance at the table tells them that a 1100-denier rayon yarn is the equivalent in weight and fineness of a 4.83 single cotton count, a 7.25 worsted, and a 2.54 wool run; and that whichever system is used, the yarns run 4,059 yards to the pound. This table runs from 10 to 5,000 den.

The fourth aid is a spinning-twist calculator, of use to order yarn spun on the cotton system. For example, a fabric designer knows that he needs a fairly high twist for a gabardine. By referring to this table he sees that for a 30/1 cotton count, to obtain the quality he wants, he must order a yarn with a twist multiplier of 4.00 to 4.50. This table runs from a count of 1 to 120, with twist multipliers of 3.00, 3.25, 3.50, 3.75, 4.00, 4.50, and 5.00.

Lockstitch Machine Has Top-Roller Feed



***The new top-roller feed** lockstitch machine features high speed and easy adjustment. (Union Special)*

High speed and easy adjustment are two features claimed for a new top-roller-feed lockstitch machine announced by Union Special Machine Co., Chicago, Illinois. The need for a sewing machine of this type stems from the fact that on certain types of seaming work in which it is necessary to sew through or join two or more matching parts, creeping or stretching often occurs, resulting in poorly matched work and a slowing down of work. With the top-roller-feed lockstitch, however, it is possible to attain outstanding speed in matching operations. Compact and simple in appearance and design, the top-roller feed gets its power from the lower

YOU KNOW THE BREED...
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Originally used to hunt wild boars, the Great Dane is usually gentle despite his ferocious appearance and great strength. Faithful and intelligent he excels as a watchdog.

Great Dane or pedigreed Great Dane? It takes specialized knowledge to make the distinction. By contrast, your product's pedigreed quality must be readily recognizable to everyone. And with Kaumagraph Identification no one can mistake it, for this clean, economical marking method reproduces your name, trademark or lettering on your product clearly, attractively. The application of manual or automatic heat to a Kaumagraph* Dry Transfer or Prestomark* Label gives any textile, leather, rubber or synthetic material the kind of identification that means better protection and distinct attention value. Send for a Kaumagraph Man today.

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Lithography for Box Wraps, Labels, Displays, Booklets, and Folders.

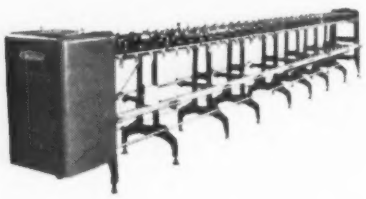
rotary shaft by an eccentric connection. Intermittent feeding action is secured through the use of a new curved-block clutch. Motion is transmitted to the feed roller through double universal joints and connecting shaft running in a grease-packed tube. The feeding action is adjustable to run faster, slower, or at same speed as the regular machine feeding mechanism, and inertia and friction are greatly reduced. The new lockstitch machine is being produced in two styles, style 61300 KA for light to medium work and style 61300 LA for medium to medium heavy work.

Circular Loom Developed in France

A circular loom for manufacture of tubular jute sacking has been developed in France by Saint Freres, 34 Rue de Louvre, Paris. The loom operates at 75 to 90 rpm. with 3 or 4 shuttles, and produces 300 circular picks per min., it is reported. The shuttles move in continuous circular motion and are motivated by a positive drive controlled by a roll with a planetary motion pushing a free roll in the back of each shuttle. The harnesses are individually cam driven and operate so that the shed opens to permit entrance of the shuttle and closes immediately after the shuttle has passed through. The beat-up is achieved by small sprockets (following the wake of each shuttle), the teeth of which push the filling yarn into place just before the shed closes.

It is indicated that the loom can be adapted to weaving of fine goods. There is no shock in the picking motion; the loom and all four shuttles come to a gradual stop when the loom knocks-off; there is a steady, even pull on the filling yarn; and shuttles are not interrupted by slamming into boxes. Mock selvages can be made to permit easy cutting of goods.

Spindleless Redraw Winds 500 Yd. per Min.



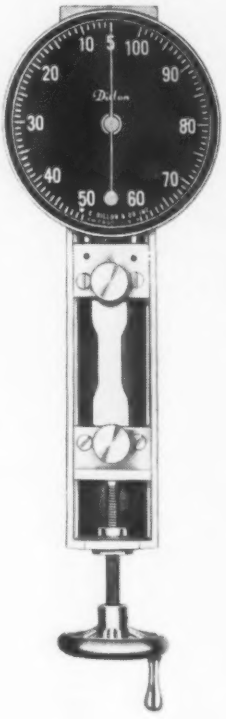
***Rapid doffing and starting of** spools is a feature of this new spindleless redraw machine. (Sipp-Eastwood)*

Smooth traverse, quick doffing, and higher speeds are claimed for a new spindleless redraw machine recently announced by Sipp-Eastwood Corp., Keen & Summer Sts., Paterson 4, N. J. The drive of the new machine provides for quick changes of traverse, changes of speeds, and changes of wraps. The drive is completely enclosed, and both cam and drive are placed at one end of the machine. Either Sipp-Eastwood's standard gate tension, a revolving tension, or washer-type tension may be used.

Spools being wound revolve on two spring-mounted arbors instead of on the usual spindle. This feature enables quick, easy doffing. It is claimed that an operator can doff a full spool, reload, and have a new spool winding in less than 5 sec.

Winding speeds of 500 yd. per min. or higher are reported, and the machine is equipped with a stronger-type traverse to withstand the higher speed. The traverse rod is made of magnesium and is fully adjustable, in, out, or lengthwise.

Hand Machine Tests Tensile Strength



***Accurate testing** by a compact, lightweight, and inexpensive machine is featured in a new tensile-strength and compression tester developed by W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill. The tester can be hand-held for operation. Its capacity is 1,000 lb. in 1-lb. increments, and accuracy of 2% of indicated load is claimed. The dial is 5 in. in diameter; the overall length, including handwheel is 15 in.; and the weight is 3¼ lb. The tester is hand-operated and costs less than $50.*

Yarn Tension Measured Quickly

***Automatic insertion of yarn** and instantaneous, accurate measurement of yarn tension are made possible by the new Saxl tension meter, developed by Saxl Instrument Co., Harvard, Mass. Yarn or other filamentous material is inserted between the rollers of the instrument by pulling the trigger **a** which is attached to and lowers a yarn guide carrying two rollers **c**. The yarn is quickly inserted between the guide rollers and the sensitive center roller **b**. The trigger is released, the yarn slides into grooves in the guide rollers, and tension is read on the dial according to the amount sensitive roller **b** is moved.*

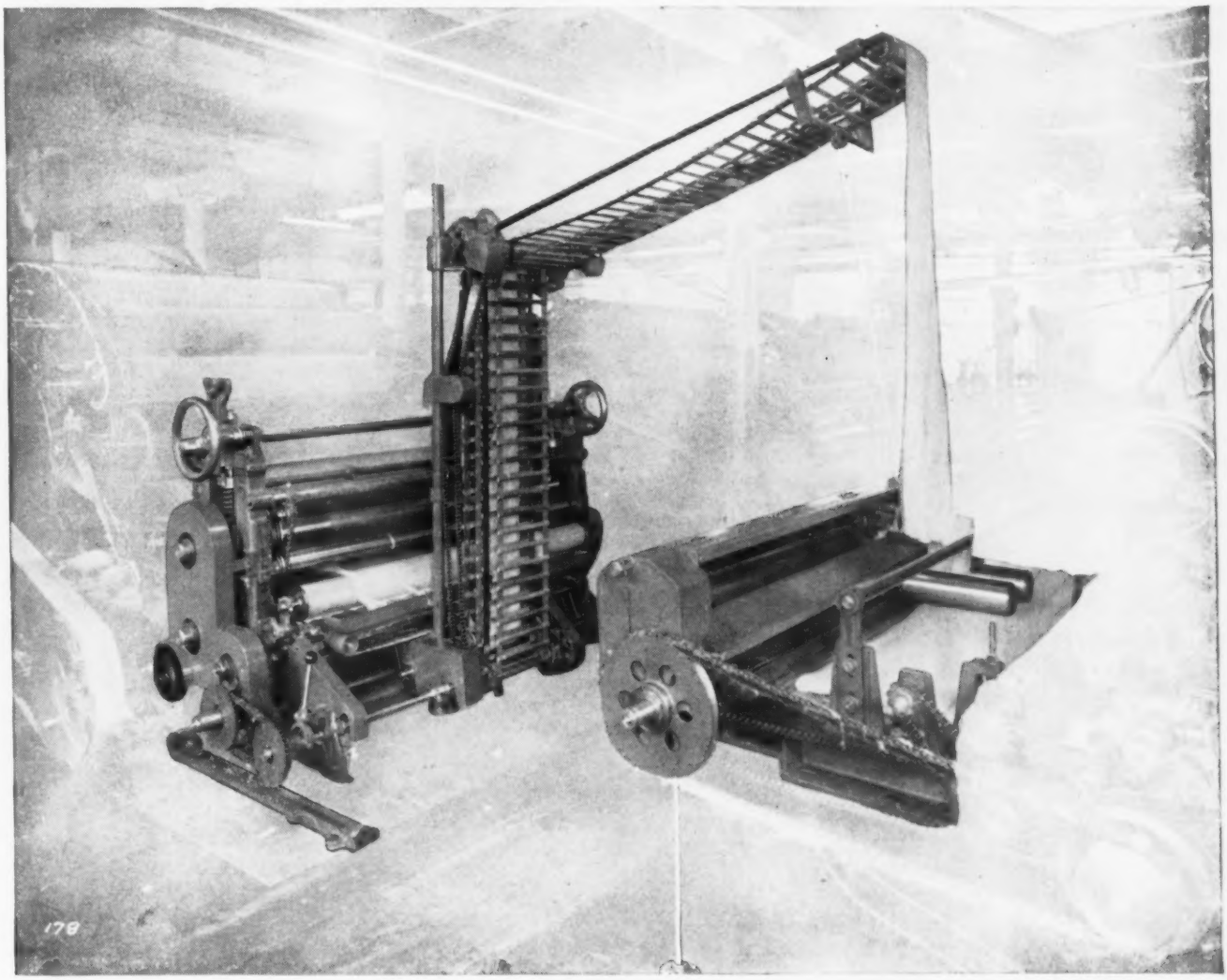
The design of the meter permits accurate readings no matter how the meter is tilted. The meter has a range of 0 to 250 gm. Readings are registered up to two rotations of the dial pointer, which is damped to prevent excessive oscillation.

Duesberg-Bosson of America, Inc.

Manufacturers of the Patented Peralta Machine and other Woolen Machinery

presents

its newly designed Intermediate Center Broad Band Feed

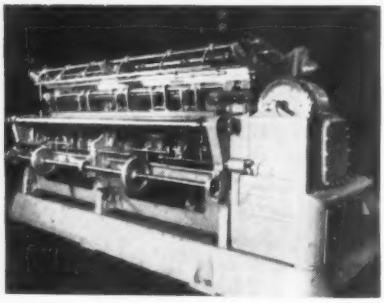


Furnished together with our **Peralta** or separately as a single unit.
Fits our **Peralta** perfectly. Saves lots of your valuable floor space.
Includes many improvements.

Duesberg-Bosson of America, Inc.

351 Harris Avenue, Providence, R. I.

Robaczynski Tricot Is Easy to Adjust

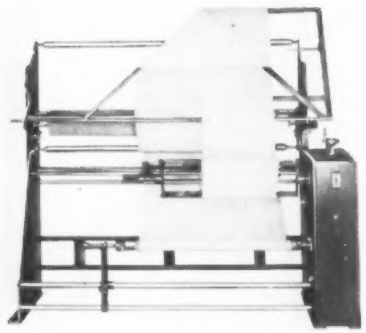


***Rugged construction** and ease of adjustment are featured in a new tricot knitting machine. (Robaczynski)*

A new tricot knitting machine for manufacture of fabrics 90, 168, or 180 in. has been announced by Robaczynski Machine Corp., 340 Ten Eyck St., Brooklyn, N. Y. The machine is of very heavy construction for minimizing vibration, is equipped throughout with antifriction bearings; and all driving mechanism, including the motor, is totally enclosed.

For convenience of the operator, all adjustments are made from the front of the machine; and adjustment indicators are located on the front of the machine. The cloth take-up is so designed that it needs no attention after first adjustment, it is claimed; and sensitive let-off tensions practically eliminate whipping of threads and use of slcy points. A variable-speed drive permits operation at any desired speed.

Inspecting Machine Has Variable-Speed Drive

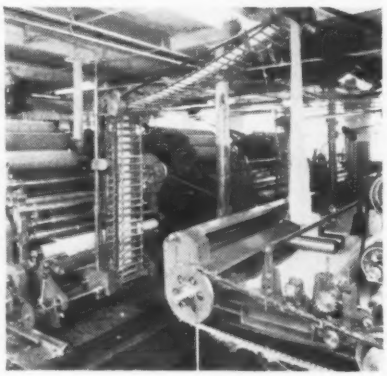


***Variable-speed drive** on this machine enables it to be used for inspecting or measuring. (Progressive)*

A new measuring and examining machine has been announced by B. J. Phillips Co., 475 Fifth Ave., New York, N. Y., distributor for Progressive Machine Co., Paterson, N. J. The machine has a standard 64-in. roller to handle all materials up to 60 in. wide; forward and reverse drive; variable-speed motor that permits variation in speed from very slow for inspection to very fast for measurement; fully chromed bars; and silent, sealed bearings.

A removable doubling attachment is available for folding material as required for retail needs. This attachment may also be used in reverse for changing goods from double-flat fold to open rolls for spreading on cutting tables.

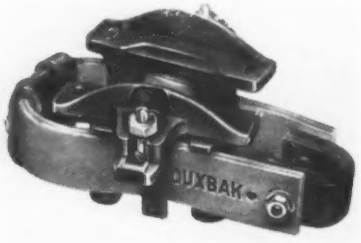
Intermediate Feed Saves Floor Space



***A new intermediate center broad-band feed** for attachment to Peralta burr crushers has been announced by Duesberg-Bosson of America, Inc., 351 Harris Ave., Providence, R. I. The new intermediate feed is so designed that it will fit the company's Peralta machine like an integral part, with a consequent saving in space. When the intermediate feed is attached to the delivery side of the Peralta machine, the delivery apron is replaced by a carrier roll which conveys the web to the entering section of the overhead conveyor. The conveyor takes only 7 in. of additional space beyond the extreme limit of the delivery apron of the Peralta. Lubrication is facilitated by improved design, and there are no feet or rollers supporting the feed to interfere with movements of operators.*

Reinforced Check Strap Gives Long Wear

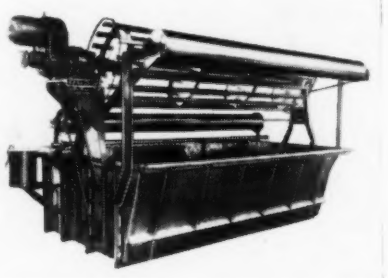
A new check strap, particularly suited for use on Draper high-speed looms, has been announced by Charles A. Schieren Co., 30 Ferry St., New York 7, N. Y. The new endless Duxbak check strap is made from first-quality pre-stretched oak belting leather. In addition, extra reinforcing pieces of the same type leather have been inserted at both ends where the picker stick strikes. Some of the original straps have been running for 2 yr., it is claimed, and are still giving good service.



***Leather reinforcements** at points of greatest wear prolong the life of the new Duxbak check strap. (Schieren)*

Dye Beck Has Variable-Speed Motor

An improved dye beck has been introduced by R. A. Van Doorne Machine Co., 13-25 Central Ave., Hawthorne, N. J. The new machine combines features of the standard dye beck with an overflow on the bevel end with outlets running directly to the sewer. A variable-speed motor enables increasing of speed of loading and unloading. Steam, water, and dyestuffs are fed through an injector mounted on the side of the machine. The machine is available in widths from 2 ft. to 20 ft., is 86 in. long from front to back, and 40 in. deep. A waterproof magnetic switch with limit switch and push-button starter is furnished with each machine. A tilting-rake beam operates the limit switch to stop the machine in case of a pickup.



***Improved dye-back** insures dry, clean floors. (Van Doorne)*

Saco-Lowell Announces Machinery Improvements

A new type of cylinder for spinning frames and twisters; a sensitive evener fulcrum; a two-bag air filter; incorporation of a chain drive in spinning frame and twister heads; and use of central, metered lubrication of roving frames have been announced in the latest issue of *Saco-Lowell Bulletin*.

The new cylinder is built of cuplike sections formed from deep-drawn steel. The bottom of the "cup" is corrugated, a factor which increases the stiffness tremendously, it is claimed. Near the bottom of the cap, the cylinder is drawn down so that it will fit tightly into the top of the next

AMIOCA

100% AMYLOYPECTIN STARCH

UNIQUE IN

- PASTE AND FILM PROPERTIES: Clear, Cohesive, Non-jelling, Non-skinning, Highly Viscous, Adhesive
- ABILITY OF PASTES TO RECOVER ORIGINAL PROPERTIES AFTER FREEZING
- EASE OF CONVERSION BY AMYLOLYTIC ENZYMES
- REMOISTENING PROPERTIES OF ITS DRIED FILMS
- COMMERCIALLY AVAILABLE IN LARGE QUANTITIES

AGAIN AVAILABLE: AMIOCA is the new commercial starch obtained from domestically bred waxy maize. The unique properties of pure AMIOCA and its modifications — *as successfully developed by National Starch Products* — should be studied by the food, paper and textile fields. These properties should be compared with tapioca, potato and other tuber starches; and with natural gums such as arabic, tragacanth, karaya and other thickeners.

DESCRIPTION: AMIOCA is unique among starches because it consists entirely of amyloypectin. It is generally believed to be a more or less branched or non-linear polymer of glucose. Its molecules, being highly hydrated and unable to readily associate, give rise to highly viscous, clear, cohesive pastes free from any tendency to thicken or jell on ageing.

Other commercial starches such as corn, tapioca, wheat, potato, etc., contain two components — usually 20-30% amylose in addition to amyloypectin. Amylose is believed to be a linear or straight chain polymer of glucose. In pastes, its molecules tend to associate with each other and with the amyloypectin molecules. This tendency leads to thickening, jelling and increased opacity.

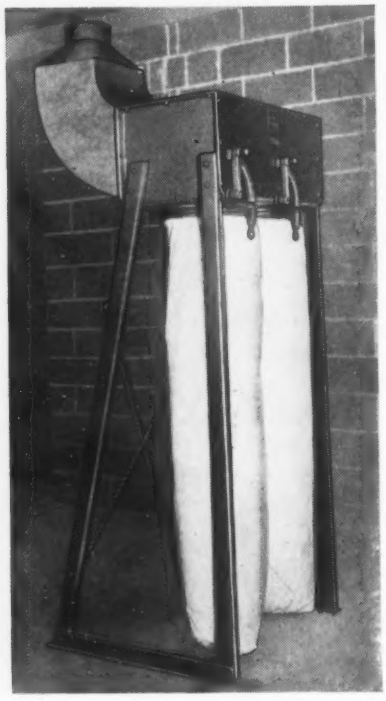
AMIOCA comes as a white powder or in pearl form resembling ordinary corn starch. It gelatinizes sharply, starting at 70°C and proceeding over a range of only 8°C. It has a peak hot viscosity of approximately 4,000 centipoises in 20 parts of water; and 15,000 centipoises in 10 parts of water. AMIOCA modifications range from materials which require from 20 or more parts of water to those requiring less than 1 part of water at a comparable viscosity.

POSSIBLE APPLICATIONS: AMIOCA and AMIOCA modifications offer *textile sizings* which are non-jelling with good adhesive and film forming properties and with excellent rinsability . . . *textile finishes* with clear, glossy films, and resistance to iron-browning . . . *grease-proof tub sizings* with non-jelling properties that permit high solids application . . . *paper beater sizings* that are non-jelling and permit a high degree of hydration . . . *paper coatings* with higher solids and greater binding power at a given viscosity . . . *foods* with modified jelling properties, clarity and freedom from cereal taste . . . *frozen foods* with ability to recover their original properties after defrosting . . . *drum dried or dehydrated* foods with better stability and clarity.

WE'RE READY to match our research and laboratory efforts with yours in further exploration of Amioca starch applications to your products. Address: National Starch Products, Research and Development Labs., 270 Madison Avenue, New York City. Plants: Dunellen, N. J., Chicago, Indianapolis and San Francisco. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V. Veendam.

National STARCH PRODUCTS

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY



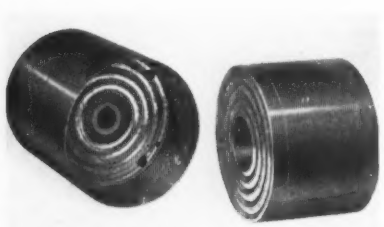
***A two-bag air-cleaning unit** is recommended for use in some applications. (Saco-Lowell)*

section which is forced on; and the two sections are welded. The result is a reinforced tube with very high resistance to deflection and far more strength than previously made cylinders. The end sections are built with extra reinforcement so that torsion is distributed over a large area. The new cylinder can be installed in existing frames equipped with a 10-in. cylinder.

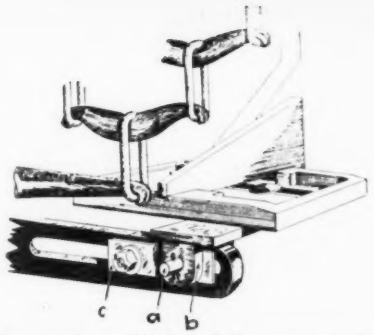
Elimination of friction and improvement in evener motion sensitivity are claimed for a newly designed evener fulcrum. The new fulcrum consists of a hardened stud, a, which is free to turn in a loosely fitted bearing, *b*, which is integral with a flat surface secured to the cross slide. Proper adjustment of pin location is attained by shifting plate c. The new fulcrum is now standard on all new pickers and can be easily and quickly installed on existing equipment.

Use of a new, two-bag air cleaner is recommended in installations of the No. 7 air cleaner with four bags where air velocity drops to the point that entrained dust tends to settle within the pipe rather than be carried to the bags.

The optional installation of the Bijur system of central, metered lubrication on roving frames is described in detail in the *Bulletin*. The lubricator is the "one-shot" type; and amount and rate of lubrication is controlled at each point of application regardless of distance to bearing, variation in fit, resistance in tubing, line, variation in temperature, variation in oil viscosity, and variation in bearing level in relation to the feed line. Multiple savings of the system are outlined, and detailed illustrations cover the complete installation.

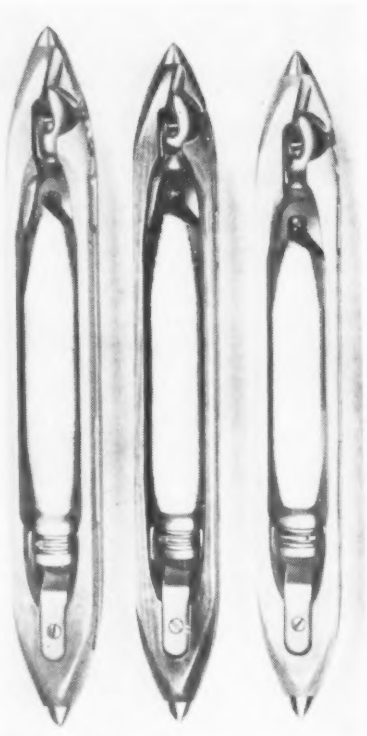


***The corrugated bottom** of the drawn cup lends considerably to the strength of the cylinder. (Saco-Lowell)*



***Improved sensitivity** of the evener motion and elimination of power loss through friction are advantages claimed for a newly designed evener fulcrum. Rough or frozen studs are eliminated, with consequent improved motion of evener pedals.*

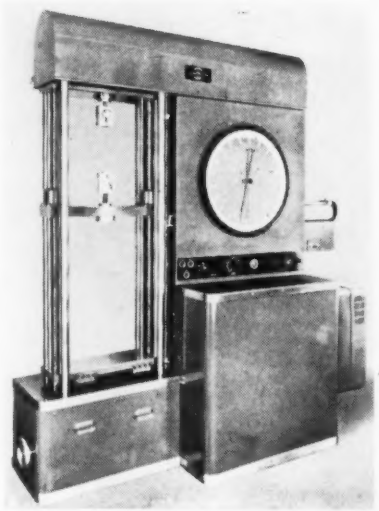
New Shuttle Has Increased Capacity



***Shuttle innovation** permits an increase of ¾ in. in bobbin length and an increase in bobbin diameter. The new shuttle is in the center. (Southern Shuttle)*

A shuttle with greatly increased bobbin capacity but with only a ¼-in. increase in length has been announced by Southern Shuttles Div., Steel Heddle Mfg. Co., 621 E. McBee Ave., Greenville, S. C. The new shuttle, known as the L.F.P. type, incorporates many new features of shuttle design and manufacture, as a shorter head, thinner walls, and processing of wood and metal as a unit, without decreasing the durability and strength. The shuttle has been tested for 2 yr. in over 100 mills; and it is reported that operating costs have been lowered by savings in filling preparation; by requiring fewer battery hands, fewer transfers, and fewer bobbins.

Precision Tester Developed by Baldwin



***A new machine for precision testing** of fibers, fabrics, plastics, and similar materials has been developed by Baldwin Locomotive Works, Philadelphia, Pa. Known as the Baldwin-Tate-Emery machine, the tester uses a mechanical-screw loading system coupled to a variable-speed motor controlled by a General Electric Thy-mo-trol. Four ranges are available: 0 to 50 lb. in 0.05-lb. units, 0-200 lb. in 0.2-lb. units, 0-1,000 lb. in 1-lb. units, and 0-5,000 lb. in 5-lb. units. Accuracy to better than 0.5% of the reading or 0.1% of the range, whichever is greater, is claimed.*

High-Pressure Steam Delivered Instantly

An instantaneous steam cleaner, the Hypressure Jenny, is being offered for textile use by Homestead Valve Co., Coroapolis, Pa. The machine is self-starting, instant steaming, oil-or-gas

AHCOVELS
for the Soft Touch

NOW MORE THAN EVER

AHCOVELS* have always brought good draping qualities and a smooth, flexible hand to cotton, rayon, wool, silk, actetates, nylon and other fabrics. It's the soft touch.

Now, Arnold Hoffman & Company has improved these matchless softeners so that they are better than ever.

AHCOVELS are now almost pure white in color, more resistant to yellowing, and more stable when subjected to heat.

Here is real news! The best substantive softeners on the market are improved and there is no increase in cost to you. Truly, finishing with AHCOVELS is a soft touch.

Sample and further data on request.

*Trademark Reg.

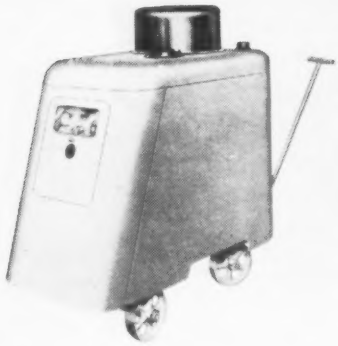
ARNOLD, HOFFMAN & CO. INCORPORATED

MANUFACTURING CHEMISTS

ESTABLISHED 1815 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.

PROVIDENCE, RHODE ISLAND

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

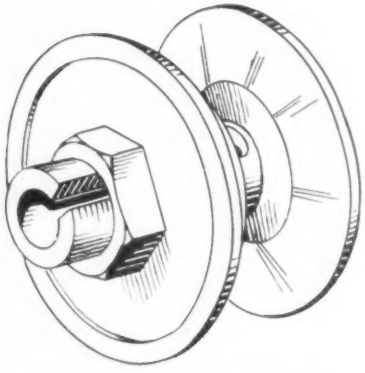


***Instant delivery of steam** at high pressure is claimed for the new Hypressure Jenny. (Homestead)*

fired, delivers steam at 80- to 120-lb. pressure and has a capacity of 90 gal. of water per hr. It may be used for cleaning of machinery, parts, floors, walls, windows, and building exteriors. Simple in construction and operation, the machine has a full-view control panel, continuous electric-spark ignition, an efficient non-clogging heating coil, and a duplex pump. It is mounted on wheels for maximum portability, and is of welded construction.

The average cost of operation is $0.90 per hr., it is claimed. The steam delivered condenses at the rate of 1½ gal., per min., requiring adequate drainage facilities for use.

V-Belt Pulley Easily Adjustable



***A spiral-wedging action** locks the two halves of this adjustable-pitch V-belt pull to the shaft. (Scientae)*

The Spiralock, an adjustable V-belt pulley which locks onto the shaft through a spiral wedging action has been developed by Scientae Corp., 101 Pine St., Dayton 2, Ohio. The pulley is made in two parts; a larger member, actually one side of the sheave, has an extended hub with a spirally increasing diameter. The smaller member,

TEXTILE EQUIPMENT NEWS
(*Continued on page 258*)

DYES & CHEMICALS — PRODUCTS & PROCESSES

Shrinkage-Control Also Yields Crush Resistance

FORMASET SR, Warwick Chemicals Co., 580 Fifth Ave., New York 19, N. Y.

Formaset SR, a new and different shrinkage-control process imparting a considerable degree of crush resistance to rayon fabrics, has been announced by Warwick Chemical Co.

The resin insures shrinkage stabilization for the life of the fabric, it is claimed, as the resin in the cured state is completely insoluble. Because of its chemical nature, it cannot contain chlorine or develop odors. It imparts in most cases a considerable degree of crush resistance and reduces the moisture regain of a rayon fabric from the normal 11% to around 4%, with a subsequent slight gain in dry tensile strength and a very measurable gain in wet tensile strength.

Emulsifiable Wax Shows Versatility

AVCOLUBE 100, American Viscose Corp., Marcus Hook, Pa.

Avcolube 100, a new synthetic, self-emulsifiable wax has been developed by the textile chemicals division of the American Viscose Corp. The new wax has unusual lubricating, softening, and anti-static properties for all textile fibers.

Avcolube 100 may be used as a finish for dyed viscose and acetate rayon, cotton, wool, nylon and other yarns to increase winding efficiency and to reduce static, especially in yarns of fine denier and low twist. It is also an effective anti-static agent for fabrics woven from these yarns as well as a lubricant for dyed knitting yarns, both filament and staple, to increase knitting efficiency and provide more uniform stitch formation.

No extra processing is required as the wax may be added either to the dye bath or to the last rinse at the end of the dyeing cycle. Since it is non-ionic, it will not cause changes in light or wash fastness and will not migrate nor volatilize. Avcolube 100 emulsifies in water of 140° F. or higher, and the small particle size makes it possible to penetrate dyed packages or beams uniformly in pressure-dyeing equipment. In most cases, 0.5 to 1.5% by weight, or a 1% emulsion concentration for padding, will give the desired effect. The wax is chemically stable to all textile-processing conditions.

Five New Dyes Announced by General

Five dyes for various types of fabrics have been announced by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y. Descriptive matter on each new color is available from the manufacturer. The dyes announced are:

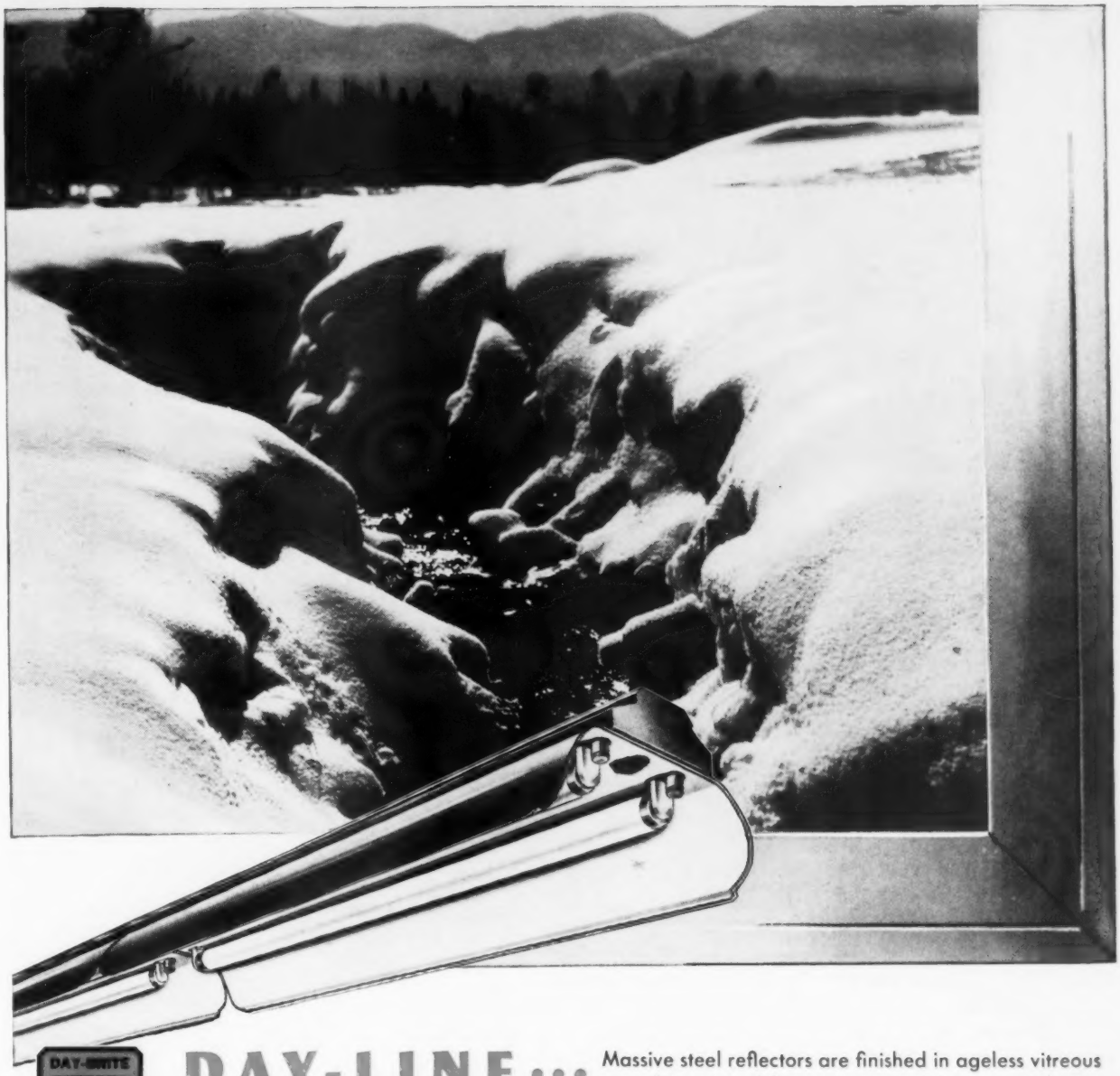
RAPIDOGEN BLUE R—a stable azoic preparation, soluble in alkali which, after printing and acid-ageing, develops in the form of an insoluble pigment possessing good fastness. Produces bright reddish-blue shades when printed on cotton or rayon fabrics.

ANTHRACENE BLUE BRA CONC. CF—a homogeneous chrome dyestuff which yields bloomy shades of navy blue on woolens and worsteds and has good fastness.

RAPIDOGEN BORDEAUX RN—a stable azoic dyestuff soluble in alkali which, after printing and developing in acid or vat ageing, develops in the form of an insoluble pigment with good fastness. Yields bright bordeaux shades on cotton or rayon.

RAPID FAST BROWN IRH POWDER—a stable azoic compound soluble in alkali which, after printing and developing in acid or vat ageing, develops in the form of an insoluble pigment possessing superior fastness. Yields pleasing reddish-brown shades on cotton or rayon.

PALATINE FAST BLUE 5RNA-CF—a metallized-acid dyestuff for woolens and worsteds possesses fastness properties approaching those of chrome colors.



DAY-LINE ...

Massive steel reflectors are finished in ageless vitreous porcelain enamel that *stays* snow-white—assures better diffused light with less upkeep.

- Retains full reflection factor — easy to clean
- Die-formed lateral channels prevent distortion
- Turned-back edges for greater strength and chip-resistance

The DAY-LINE reflects expert engineering in every part. May we send Bulletin 30-A with complete details?

The DAY-LINE

Heavy-duty industrial fluorescent fixture with porcelain-enameled steel reflectors. Designed for two and three 40- or two 100-watt lamps — unit or continuous installations. U. S. Patent Nos. 2317434, D-135375 and D-133458.

Day-Brite Lighting, Inc., 5455 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.
In Canada: address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ont.

294

IT'S EASY TO SEE WHEN IT'S

DAY-BRITE *Lighting*

Round Table

FOR EXCHANGE OF IDEAS —*The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Fighting Flash Fires Is a Vital Mill Problem

One big problem of the textile industry that is not receiving careful attention by mills is fire, particularly in the opening room and picker room, and wherever else raw cotton is handled. Most mills have their own methods of dealing with fire hazards. Some have worked out means of combatting fire that are good and effective; others use hit-or-miss systems that are changed only after a considerable loss.

Lint or flash fires are peculiar unto themselves, and methods used to cope with an ordinary fire are impracticable for dealing with a lint-cotton fire. More attention should be given to educating workers as to the things to do and the things not to do when a flash fire occurs.

Water from a hose should never be directed at a lint fire. A steady stream of water will cause a draft, and the result will be similar to that which occurs when a stream of water is directed at a gasoline fire; instead of putting the fire out, the draft created by the flow of water causes the fire to spread rapidly.

We have adopted a plan of fire-fighting preparedness that we think is quite effective. Five hours each week are devoted to cleaning the opener room and picker rooms. Since these departments are responsible for most cotton-mill fires, we consider this cleaning time well spent.

Second, we have installed a series of alarm cords that can be conveniently and quickly reached by any operator who notices a fire or smoke. When the fire alarm sounds, a state of emergency exists in that department until all danger of fire has been removed.

Third, we hold no fire drills without adequate warning beforehand. We have found that if fire drills are held without such warning, the workers fall into the habit of thinking that an alarm means just another fire drill and become slow and careless in responding to the alarm. When such an outlook develops, valuable time is lost and the fire is permitted to gain headway.

Fourth, we have installed a sprinkler system that is capable of applying water to all parts of a room where fire is likely to break out. If any physical changes are made in a room, such as rearranging machinery or partitions, the sprinkler system in the affected area is quickly revamped to correct any inadequacies that may have been caused. We also maintain an oversupply of chemical extinguishers throughout the mill, and we see to it that these extinguishers are full and in good working condition.

I should like to see some exchange of ideas and experiences through TEXTILE WORLD on lint- or flash-fire fighting. Such information, coupled with technical advice from underwriters and manufacturers of industrial fire-fighting equipment, may save the textile industry many thousands of dollars in financial loss. (*R*-371)

Better Vacuum Cleaners Needed by Weave Room

I would like to see a real effort made to produce a vacuum cleaner that will really clean. One big problem of a mill is to keep the weave room clean when the warp is changed. Various methods are used. Some are fairly good, but none of them is doing the job in a satisfactory manner.

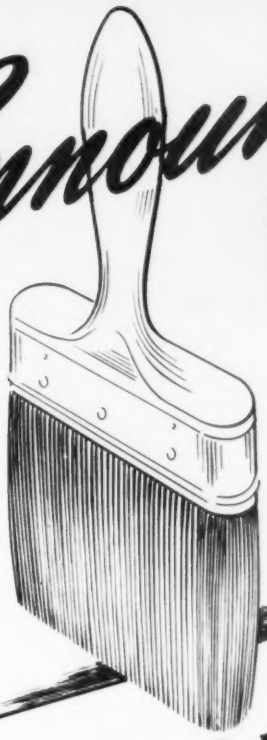
Some enterprising manufacturer of industrial vacuum cleaners should put their technicians to work on this prob-

(*Continued on page* 182)

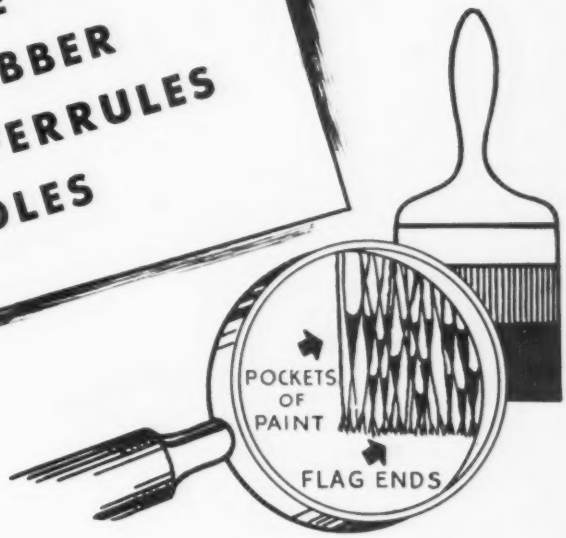
TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Pardon me—do you dye sheets?"

Announcing PAINT BRUSHES by Fuller BRUSH CO.



100% PURE BRISTLE
VULCANIZED IN RUBBER
STAINLESS STEEL FERRULES
LACQUERED HANDLES



When a famous brush manufacturer like Fuller starts selling paint brushes, that's good news. For one thing, it means brushes of *pure bristle.* Their "flag ends" permit paint to be applied with a minimum of brush marks. Also, pockets formed by overlapping, "flag end" bristles provide a reservoir for the paint...which flows evenly onto the surface when the brush is flexed. Bristles are resilient and spring back with each stroke. Look for the Fuller trade mark...it's your assurance of a pure bristle brush.

Send for new booklet . . . it's chock full of helpful brushing tips. Write to . . .

The FULLER BRUSH Co.

INDUSTRIAL DIVISION, DEPT. 42A, HARTFORD 2, CONN.

THIS IS NO. 66 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

VARIOUS SHAPES OF PINEAPPLE CONES (No. 50 Winding Machine)

The Pineapple Coning Attachment is capable of building a wide variety of package shapes as shown in Fig. 1. The taper of both nose and base of cone can be varied; the winding point can be placed where desired; and there is a choice of traverse lengths.

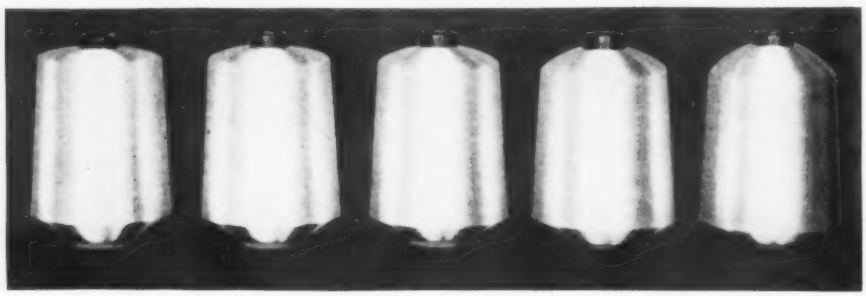


Fig. 1. Examples of variety in shape of Universal Pineapple Cone.

The traverse of the yarn is controlled by the motion of the bell crank (A in Fig. 2), which in turn is controlled by the shape of the slot in the taper bar (B). This bar pivots on a center which is created by inserting a stud in one of the five holes in the taper bar and traverse frame back. The pivoting takes place as the increasing size of the package causes the inner end of the bar to travel along the groove in the builder cam (C). The use of one hole or another does not affect the amount that the traverse is shortened, but it does change the angles at nose and base of the cone. The farther forward the hole that is used, the greater the taper at the base and correspondingly less at the nose. Using a hole farther back gives the opposite effect. Selection of the proper hole to give the desired taper is the first adjustment to be made.

The next setting — preliminary to determining the winding point — is made with the traverse bar. There is a table in the catalog giving the normal traverse bar settings for the commonly used builder cams, but the following will do if it is necessary to use an alternate method.

1. Place the pressure roll (D) against the empty paper cone and the taper bar with the back end raised nearly as high as it will go, so that there is only $\frac{1}{32}$ in. clearance between the bar and the shoulder of the traverse frame back.

2. Check the position by turning the cone by hand through one revolution of the cam.

3. Obtain the desired winding point by screwing the traverse bar in or out of the traverse slide.

This gives an approximate position of the winding point. Next it is necessary to adjust for the traverse length. All cones are wound with a 5 in. main cam, so the length of yarn traverse must be controlled by the builder cam (C).

1. Position the builder cam holder so that it is half-way in its limit vertically.

2. Assemble the builder cam to the holder, moving it to the right or left to give the desired traverse length — to the right for a shorter traverse, to the left for a longer traverse.

With the traverse length set, a more accurate setting of the winding point is made by shifting the builder cam holder and cam assembly up or down by means of the slots. The higher the holder, the farther forward the winding point.

Whereas the taper bar hole setting affects only the taper, the other two settings affect each other to some extent, and a little experimentation is therefore necessary in order to obtain the shape of package desired.

There are no tools manufactured for duplicating the settings from one spindle to the next, but they can be easily improvised. A piece of wood whittled to proper size is all that is necessary to duplicate any of the settings.

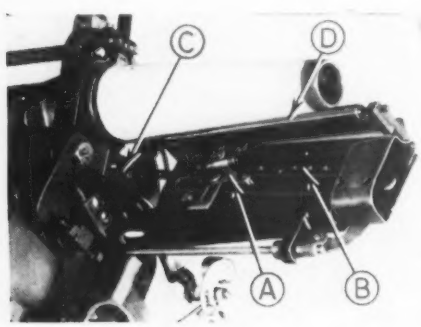


Fig. 2. No. 50 Pineapple Coning Attachment.

Builder Cams

Any of a great variety of tapers is possible through a choice of several builder cams. The four shown in Fig. 3 are standard; the others are for special effects.

(The cams and holders can be identified by the number on the face of the part.)

No. 5 Builder Cam 50-3018-5P3. For traverse lengths of $5\frac{1}{2}$ in. or less and medium base diameter.

No. 6 Builder Cam 50-3018-6P3. For traverse lengths greater than $5\frac{1}{2}$ in. and medium base diameter.

No. 8 Builder Cam 50-3018-8P3. Same as No. 6 except that it provides for slightly more taper.

No. 15 Builder Cam 50-3018-15P3. For large diameter packages (around 6 in.) only. Taper is much less than with other cams. Not recommended for use with highly elastic yarns.

The builder cam holder used for traverse lengths under $5\frac{1}{2}$ in. (50-3017-P3) is not marked. The No. 4 holder (50-3017-4P3) stamped with a "4" is used for traverse lengths of $5\frac{1}{2}$ in. and more.

Fig. 3. Four standard Builder Cams (right) and two Holders (left).

See our Catalog in TEXTILE WORLD YEARBOOK

*Reg. U.S. Pat. Off. November, 1947

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

23-7-3

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

Kinks AND SHORT-CUTS

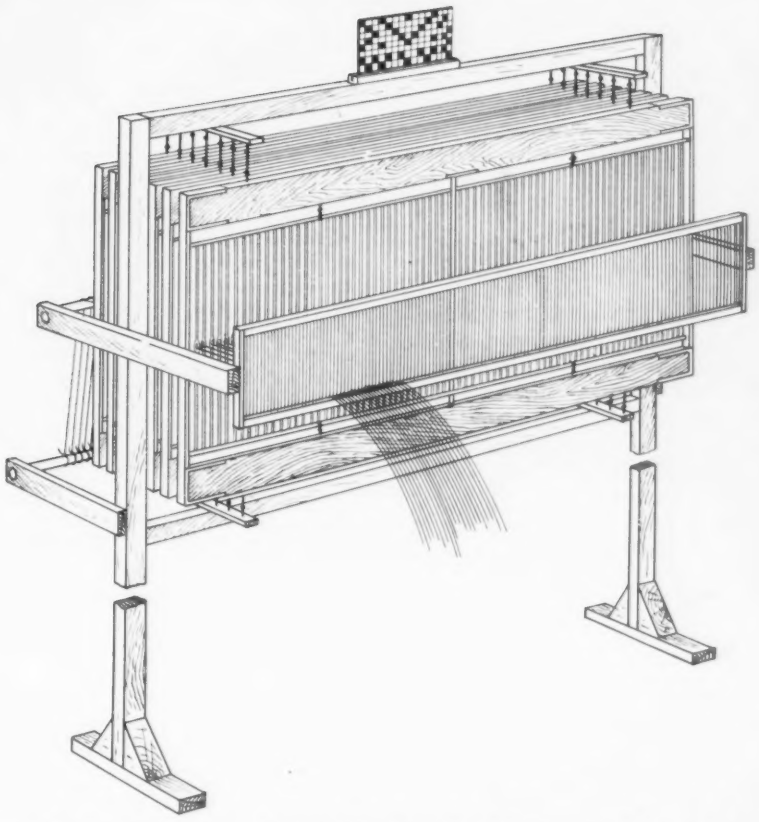
Wrong Ends Reduced By Educating Weavers

★ *Prize Winner for November*
(September contest)

Wrong ends drawn through the loom harnesses and reed can be one of the most costly mistakes made in a worsted weave room. Worsted weaving, of course, is generally one of the most expensive types of weaving in the textile industry, both from the standpoint of labor cost and value of the goods; and a few improperly drawn warps can therefore quickly reduce the normal profits of a mill.

We have found that carelessness and insufficient knowledge are responsible for most of our wrong ends, and our experience has been that wrong ends can be greatly reduced by a good system of educating weavers. To accomplish this, we built a stand for harnesses and a reed that would enable us to duplicate the warp conditions at the loom. This stand, shown in the accompanying sketch, is kept in the weaving overseer's office.

Our use of the stand is as follows: If a weaver ties in a wrong end, he is called to the office and the weaving overseer teaches him how to draw the ends properly. First, the overseer draws in the ends exactly as they were drawn in on the loom and points out where the wrong draws were made. This wrong draw and also the correct draw are put on the blackboard in the office. When the overseer is satisfied that the weaver understands how the warp should be drawn and where he



Improperly drawn warps have been significantly reduced in one worsted weave room by the use of this harness and reed frame for educating weavers in drawing in a warp. The frame is located in the weave room overseer's office; and when a weaver makes an improper draw, he is called to the office and shown his mistake on this frame. The weaver then demonstrates to the overseer that he understands the correct draw. The frame is about 30 in. wide and 54 in. high.

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 SAVINGS BOND will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at regular rates for this type of matter with an extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.

KINKS & SHORT-CUTS
(Continued from page 173)

made his mistake, the overseer breaks out a number of ends and looks on as the weaver redraws them. The overseer also requires the weaver to give him a step-by-step account of why he draws each end.

In this way, we have reduced our wrong ends and have succeeded in making the weavers more careful in all their work. (K-754) *Tom Vine, Huntingdon, Quebec.*

Diameter of Pulley Increased With Belting

In spinning rooms where yarn numbers are changed frequently, it often happens that there are not enough pulleys of a given size available to make a desired change. Since the need for the pulleys may no longer exist by the time they can be bought and delivered, it is often impractical to send through a purchase order for a certain size of pulley.

One way of solving such a problem is to build up the size of smaller pulleys with leather belting. A pulley built up in this way will operate satisfactorily for a long time.

If they are available, use pulleys that can be built up to the desired size with one round of leather belting. A discarded belt of the same width of the pulley may be used. If such a width of belt is not available, two widths may be used; but the leather covering should be trimmed so that it exactly fits the working face of the pulley without lapping over the edges.

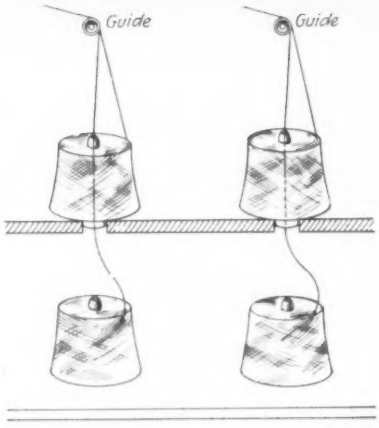
The cover can be fastened with flathead nails to a wooden pulley or with glue to a metal pulley. (K-735)

Plying Two Ends of Yarn Can Be Done on a Winder

In making decorative fabrics, it is often desirable to use a two-ply filling, plied with as little twist as possible. This practice is frequently followed also in using up odd lots of yarn.

Sufficient twist to hold two ends of yarn together can be inserted at the winder by arranging the supply packages as shown in the accompanying sketch. Of course, this method is not intended as a substitute for a regular ring twister for plying yarns, since it offers no control for the turns per inch; but on occasion it may be useful.

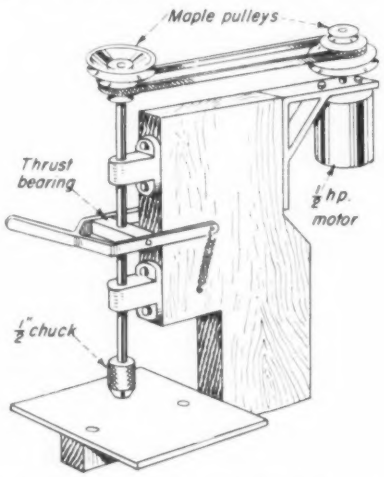
Two tiers of supply packages are arranged as shown in the sketch. Beneath the packages in the top tier, holes are made in the supporting shelf. Yarn ends from the packages in the bottom tier are drawn through the openings and on through the cones on which the upper packages are wound.



A small amount of twist can be inserted in a two-end yarn at the winder by arranging the winder packages as shown here. The end from the lower package is pulled through an opening in the shelf below the upper package, through the upper cone, and over the yarn guide. The end from the upper package wraps around this end each time a round of yarn is pulled off the upper package. Of course, this method of plying yarn can be used only on special occasions, since it offers no control of the amount of twist inserted and the twist increases as the yarn packages grow smaller.

When an end from an upper and a lower package are started on a cone as one two-ply end, the yarn from the upper package wraps around the yarn from the lower package at each revolution of the upper yarn around the over-end supply package. (K-738) *Osbert Hughes, Spray, N. C.*

Homemade Drill Press Drills Holes up to 5/8 in.



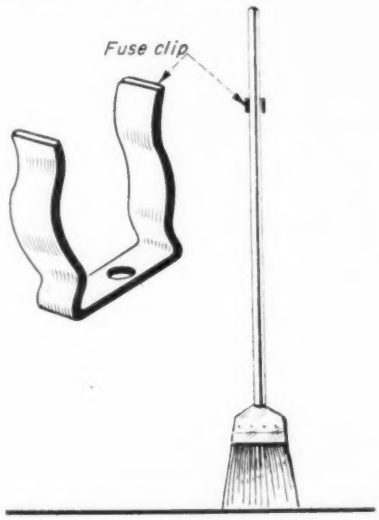
This drill press, which will drill holes up to 5/8 in. in diameter, was "homemade." The drill press, naturally, has definite limitations, such as to its stroke. (K-747) The Lincoln Electric Co.

Carbonized Woolen Goods Need Neutralizing

It is customary to neutralize goods after they have been carbonized, particularly if the shades to be dyed are light or if the colors to be used are not absolutely level in dyeing. A solution containing 2 to 3% ammonia is a good neutralizing agent. Run the goods cold for 15 to 20 min., and then rinse and dye them in the usual manner.

On goods that will be dyed dark shades, the neutralizing run can be omitted and the 2 to 3% ammonia added to the bath containing Glauber's salt and dyestuff. Boil ½ hr. If necessary to exhaust, add acid and boil for another ½ hr. Then rinse in cold water. (K-726)

Discarded Fuse Clips Make Broom Holders



Old fuse clips that have been thrown out with obsolete switch boxes can be used as broom holders by fastening them to the wall at a convenient height and sticking the broom handle into the spring clip. (K-724)

Markers on Loom Box Used for Setting Picker

On a loom where box sweep (or stroke of the picker) is critical, such as the Crompton & Knowles S-6, a permanent guide for measuring the stroke will save a fixer considerable time in correcting the stroke after making various other adjustments. For example, when a lug strap or picker stick breaks and a new one is put on the loom, it is necessary to secure a stroke of 8½ in. although there may be a slight deviation from standard measurements in the adjustment of other parts.

We have found that better picking can be obtained on the S-6 loom by

WHY DO CERFAK DETERGENTS COST YOU *Less?*

Because a little goes a long way. They do more work with less material, so you don't need to use as much as was required of inferior scouring agents sold on a price-per-pound basis.

That's what "better money value" means—the judging of a detergent on its cost per yard of fabric or pound of yarn processed, rather than on the initial price. When you compare CERFAK detergents either to soap or to less effective synthetic scouring materials, you'll find how *inexpensive* the Cerfak series really is.

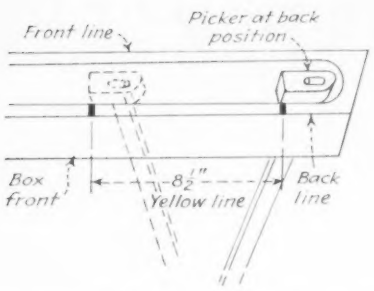
They are supplied in liquid or flake form; for your particular scouring job, ask the Houghton Man to recommend the proper type of—

HOUGHTON'S CERFAK

E. F. HOUGHTON & CO. • PHILADELPHIA AND CHARLOTTE

KINKS & SHORT-CUTS

(Continued from page 174)



The stroke of the picker is indicated on this shuttle box by yellow lines. With the picker all the way back, paint a yellow line across the top of the box. Then measure 8½ in. along the top of the box and paint a second line. These lines are used by one mill to insure quick and accurate adjustment of the picker stroke on S-6 looms.

painting markers on the top of the box to indicate the 8½-in. stroke that we desire.

With the picker at the extreme back-of-box position, we paint a yellow line across the top of the box at the picking face of the picker. We then measure 8½ in. along the top of the box and paint a second yellow line. These lines are used as guides for testing the stroke of the picker.

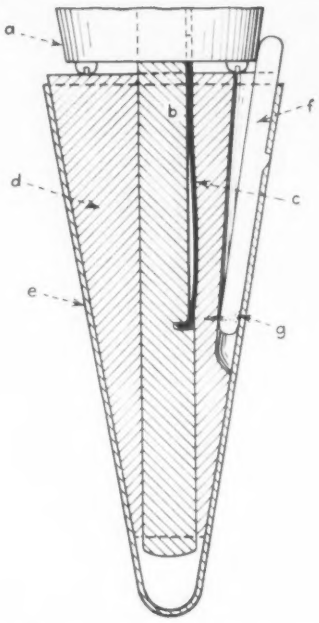
Now and then the back position of the picker is changed slightly because of wear or adjustments to the loom. In such a case, we either paint new lines or measure from the old lines. *(K-675)*

Cloth-Roll Piece-Up Sticks Are Kept in Place by Tape

Mills that use piece-up sticks on cloth rolls to start the cloth winding around the rolls usually have some trouble in keeping these sticks on hand. When the cloth is unrolled and the stick comes out of the slot, the stick frequently becomes lost or broken before it gets back to the loom and is put into use again.

We have solved this problem of lost or broken sticks by using tape to hold them in the slots. When the cloth is unrolled in the cloth room, the stick is placed back in the slot and a short length of tape is placed over the stick near each end to hold the stick in place until the roll is put back on the loom. *(K-678)*

Cone Holder Reduces Mills' Press-Offs



Press-offs and loss of production were reduced in one knitting mill that produced hosiery from 45/1 to 54/1 worsted yarns by using this cone holder to reduce tension on the yarn during knitting. Wooden cone d fits over stem b and is held in place by spring c. Yarn cone e fits over wooden cone d and is held in place by locking bar f.

In knitting fine worsted hosiery from yarns ranging from 45/1 to 54/1, we found that many of our press-offs and much of our production loss were due to too much tension on the yarns between the cones and the needles. We reduced this tension by suspending the cone holders as shown in the accompanying sketch and thereby decreased our number of press-offs and increased our production.

Cone-holder base *a* is fastened to a bar-iron or wooden support above the point of delivery of the yarn. Stem *b* is glued in the center of *a*. In one side of *b*, a groove (shaded in the sketch) is cut so that spring *c* will fit into it. This spring is made of a length of spring steel. One end of it is bent at a 90° angle, so that it will fit in the slot at the lower end of the groove. This arrangement prevents the spring from slipping out of place. The upper end of spring *c* is straight, so that it can slide up and down along the groove.

Wooden cone *d* is hollow and fits over stem *b*. It is slightly smaller in diameter than paper cone *e* on which the yarn is wound. When cone *d* is placed over stem *b*, spring *c* is depressed; and the outward pressure of the spring against the inside of the wooden cone holds the cone securely in place during the knitting process.

In one side of wooden cone *d*, a slot for receiving locking bar *f* is cut. Bar *f* is secured to the cone by screw *g*. Screw *g* is not positively attached to *f* but fits in a slot in *f* so that bar *f* can be pushed up or down along the wooden cone.

To use the cone holder, wooden cone *d* is placed over stem *b* and is held by spring *c* in a position far enough down on stem *b* to permit locking bar *f* to be pushed to the lower end of the slot in the side of the wooden cone. A cone of yarn (represented here by paper cone *e*) is placed over wooden cone *d*, and bar *f* is raised so that the upper end of it fits against base *a*. The whole assembly is then pushed up on stem *b* until the base of wooden cone *d* fits against the screws in base *a*. The cone of yarn will be held securely in place.

When the cone is empty, it can be easily removed by pulling wooden cone *d* down on stem *b* and pushing bar *f* down the slot in *d* to release the paper cone. *(K-748)* *Walter A. Simond, Franklin, N. H.*

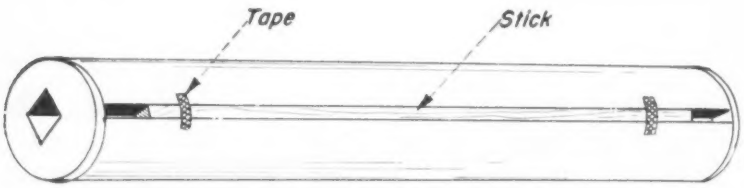
Warper-Shaft Extension Aids in Removing Brakes

To remove the hydraulic brakes of a Barber-Colman high-speed warper, it is necessary to slip the whole brake assembly over the end of the warper shaft. This assembly is quite heavy, and it usually requires two men to slip the assembly out so that it will not drop down on the threads on the end of the shaft and ruin them.

One man can remove and replace the assembly if a shaft extension similar to the one shown in the accompanying sketch is used. Just before the brakes are removed, screw the extension on the warper shaft and remove the brakes. Leave the extension on the shaft until the brakes have been replaced.

Such an extension is also useful in removing the drum from the warper. It gives hand room for three men to lift the drum.

In removing the brake-end bearings on the warper shaft, trouble is frequently encountered with the bear-



To avoid losing or breaking piece-up sticks on cloth rolls, secure the sticks to the rolls when the cloth has been unwound and the roll is to be transported back to the weave room.

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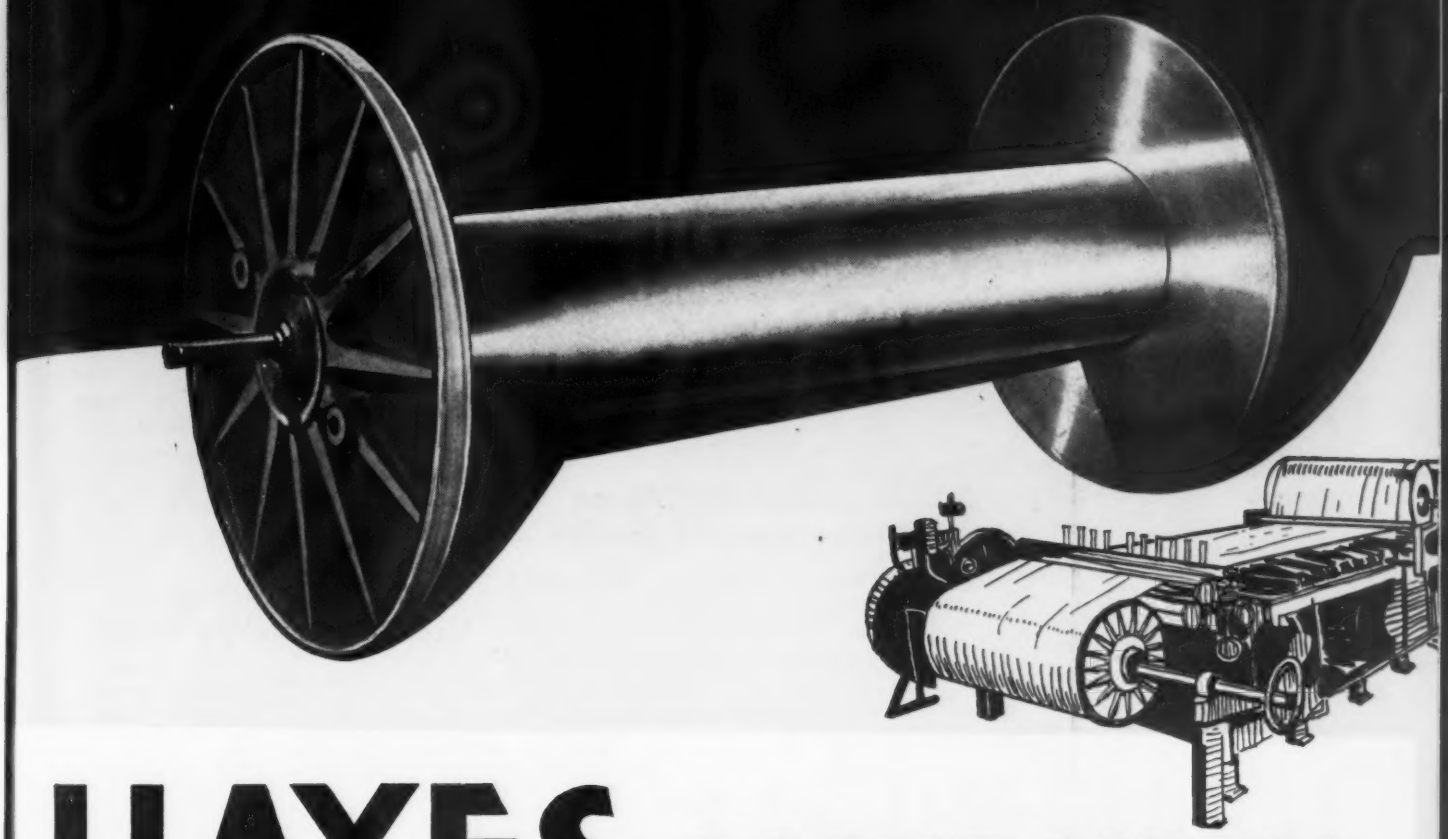

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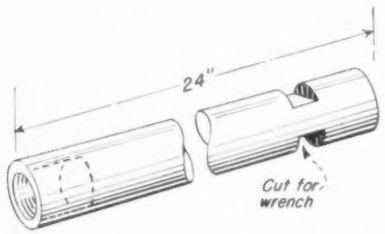
KINKS & SHORT-CUTS
(Continued from page 176)

ings and sleeves "freezing" to the shaft. This trouble can be avoided by liberally greasing the shaft with graphite grease before sliding the brakes on.

Another common trouble is that the shaft turns inside the sleeves. Such turning, of course, ruins the shaft. The best remedy for this trouble is to tighten the two nuts on the end of the warper shaft very tight. We use a socket wrench with a 6-ft. handle for this job.

These two precautions have entirely eliminated the use of brake pullers on our warpers. (K-720)



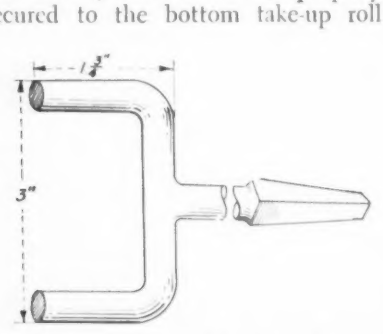
This extension is designed to screw over the brake end of a Barber-Colman warper shaft when the hydraulic brakes of the warper must be removed. The extension protects the shaft threads and makes it possible for one man to remove and replace the drums with ease.

Improper Winding of Cloth Corrected With Crank

Unrolling or rerolling the take-up on a loom when the cloth has wrapped around the take-up drum instead of the cloth roll can be done easily by using the take-up crank shown in the accompanying sketch.

Occasionally, after a cut of cloth has been taken from the loom and another roll started, the cloth is not properly secured to the bottom take-up roll and the friction roll is left unfastened. When this condition occurs, the cloth will feed to the sand drum; and several yards may wrap around the drum. To unwind the cloth and rewind it properly on the roll by turning the pick wheel can be a difficult job.

The take-up crank consists of a brace such as carpenters use and a fork made from a heavy picker rod. Insert the shank of the fork into the end of the brace as though it were a bit, and place the fork in the spokes of the handwheel and pick wheel. Prop up the take-up and hold pawls. The drum can be turned easily by turning the brace. (K-741)



This take-up crank is useful in unwinding and rewinding cloth that has rolled up on the take-up drum of a loom instead of on the take-up roll. The crank consists of a carpenter's brace and a fork made from a discarded picker rod. Place the ends of the fork between the spokes of the handwheel and pick wheel, and turn the brace.

Discarded Slat Apron Makes Nonskid Footing

Discarded slat aprons from cotton opening and picking machinery can be used to advantage where nonskid footings are needed, as on a ramp or at the foot of a stairway. The apron can be laid lengthwise so that the slats extend crosswise across the surface where the footing is needed. On a steeply slanting ramp, the apron may need anchoring; but on a horizontal or slightly inclined surface, no anchoring is needed. (K-757)

Mirror Is Useful in Straightening Needles

Knitting fixers who do a great deal of needle straightening know that this job is quite straining on the back muscles. A seat that is high enough to be comfortable for sighting the needles to align them with the perimeter of the cyinder is usually too high to permit easy sighting to make sure that the needles are at a 90° angle with the needle ring. It is necessary to move back and bend down to get the angle alignment.

The backing off and bending down can be eliminated by placing a mirror behind the needles. The mirror should be mounted on an easel that can be set at the angle best suited to the individual fixer's height.

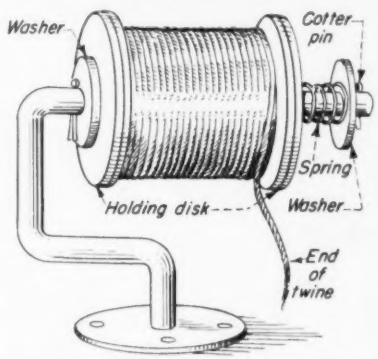
After adjusting the angle to the proper degree, the fixer can remain in an upright position and, by looking in the mirror, see whether or not the needles are properly spaced and at a true 90° angle with the cylinder. The field of sight through the mirror should include the full length of the needles plus the upper rim of the cylinder. If the field of vision is too long, distortion will be present because of the arc of the cylinder. About 3 in. is a good length. (K-755)

Provide Each Loom With a Clean-Off Brush

An automatic loom usually has a large collection of waste ends and lint adhering to the reed, box mouth, race plate, and other parts on the battery side. As the loom load is usually heavy, a weaver cannot take time to pick off these waste ends every time he passes the loom.

Cleaning the loom can be aided by providing each weaver with a small brush for each loom, hanging the brush on a hook on the battery side. When a cut-off is made by the weaver or inspector, the loose yarn ends, lint, and other matter should be brushed off. This practice will lessen slubs, jerked-in filling, double picks, and other defects in the cloth (K-753)

Stand and Tension Device Useful in Mounting Twine



A stand to hold twine used for tying harnesses and reeds together can be made as shown here and mounted on an entering, twisting, or knotting frame or on a convenient table by bolts or screws through the base.

The supporting arm, made of ¼- or ½-in. steel rod, may be bent to fit into the space available. A new roll of twine is placed on the stand by removing the cotter pin, washers, spring, and holding disk; removing the core of the old roll; and slipping the new roll over the end of the rod.

The inside surface of the disk should be covered with felt to provide a small amount of friction tension to control the unwinding of the twine. (K-737) B. Bernard, Drummondville, Quebec.

New-Type Knitting Cone For 15-Den. Nylon

Throwsters are having a great deal of difficulty in winding 15-den. nylon to make a first-class knitting package. I have tried a number of methods for coning 15-den., but I have not had much success because of the tendency of the yarn to throw over on the ends of the package.

We are now winding a new-type package that is knitting with very

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THE ECONOMY AND ADVANTAGES of STAINLESS Steel Flat Steel Heddles

During the war it was necessary to produce, on a mass production basis, fabrics made of Nylon and Acetate Fibres of high quality (due to uses to which these fabrics had to be put).

The non-rusting feature, together with the long wearing qualities of Heddles and Reeds made of Stainless Steel is indispensable today in producing filament yarn fabrics, nylon and acetates.

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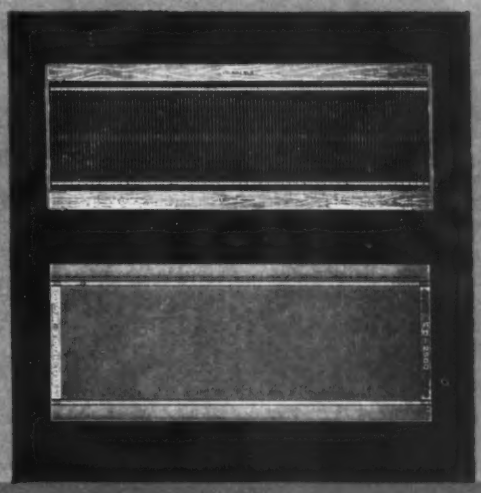

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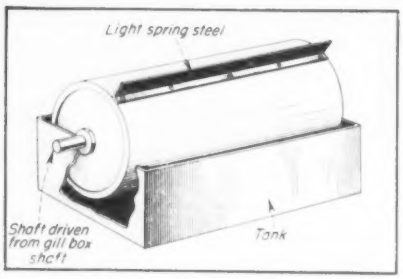
good results. The package is wound on a sizing machine by taking the chuck off and replacing it with a cone holder taken from a coning machine, using the knock-off flange and handle. The yarn is wound on a paper cone. By using a set tension, we have control of the density of the package from extremely soft to hard. The tension can be set to suit almost any needs. The package is wound with a barrel wind and a feather edge on the top and bottom of the cone, with the result that there is no chance of a cross over.

All knots should be placed at the base of the cone, away from the main body of yarn, so that there is no chance of the yarn winding below the knot. (K-739)

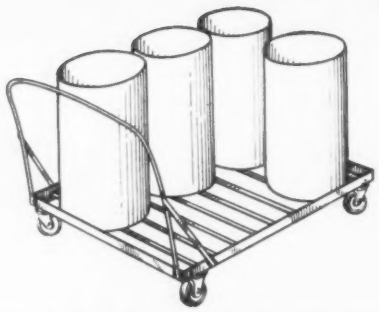
Emulsion in Tank Stirred Continuously



A piece of light spring steel attached to the revolving roll in the emulsion tank of a worsted gill box is useful in keeping the emulsion stirred so that it remains uniform. As shown in this view of the tank and revolving roll, there is a 1-in. clearance between the roll and the sides and bottom of the tank. A piece of 1½-in. spring steel that extends the length of the roll and is bent as shown will just clear the sides and bottom of the tank as it revolves with the roll. (K-550) Angelo Calandra, Bristol, R. I.

Maneuverable Hand Truck Aids Doffing of Cards

In many card rooms, card tenders must push cans of sliver a considerable way to place them at the drawing frames. If the card alley is open and the planks in the floor run lengthwise the alley, the cans can be pushed along the floor without a great deal of difficulty. However, if the planks run crosswise the alley or if the cans must be pushed through a doorway, pushing five or six cans at a time is difficult. If fewer than five or six cans are moved at one time, too much time is taken up in doffing the cards.



This truck holds six cans of card sliver. Card tenders who must push cans across rough floors or through doorways where the floor is not level with the card-room floor will find its use advantageous. Four casters and its convenient size make it easily maneuverable.

To solve the difficulty of such a situation in our card room, we made a hand truck for each card tender. The truck, shown in the accompanying sketch, will hold six cans, is easily maneuvered, and will go into any alley that is wide enough for a person to walk comfortably. It is 38 in. long and 26 in. wide. Thus, it will accommodate two double rows of cans, with three cans to the row.

The truck was made in our welding shop. The frame of the body is made of 2-in. angle iron, and the crosswise supports welded to the sides of the frame are of 1-in. flat steel. The handle is a bent length of ½-in. pipe welded to the back members of the frame and braced on each side with a 12-in. length of 1-in. flat steel. One end of each brace is welded to one side of the handle, and the other end is welded to one of the side frame members. The truck is mounted on four casters.

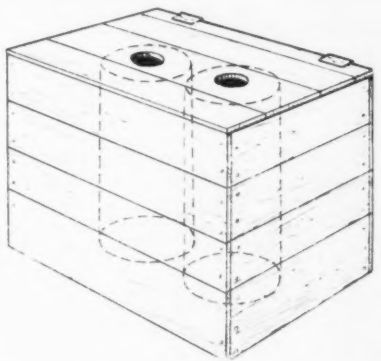
To use the truck, the card tender doffs a card and sets the can of sliver on the truck. The upright sides of the angle-iron frame prevent the can from sliding off the truck. When the tender has placed six cans of sliver on the track, he pushes the truck to the drawing frames, unloads it, and brings back six empty cans. (K-760) *R. L. Taylor, Columbus, Ga.*

Sliver Cans in Box Used for Roving Waste

A waste box that we find quite useful and convenient around the fly frames and spinning frames in our mill is shown in the accompanying sketch. It serves the following purposes: (1) waste storage, (2) waste identification, (3) storage of spinners' cleaning equipment, and (4) as a seat for spinners.

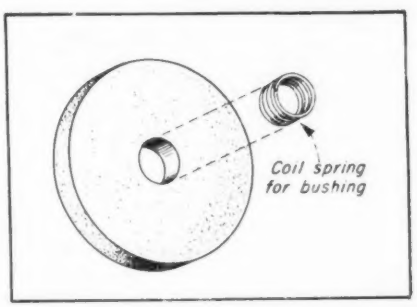
As shown in the sketch, the wooden box that holds the two sliver cans is 39 in. long, 25 in. wide, and 28 in. high. We use two sliver cans in the box; but if desired, more could be used.

The box has a wooden top hinged so that it can be raised in order to remove the waste cans, cleaning brushes, etc. As we use the box, two round, 4-in. holes are cut in the top, and the sliver cans are placed in the box directly below these holes. If different blends of stock are being run, boxes for the different blends should be painted different colors so that they are readily identifiable. (K-756) *J. B. Buyter, Fitzgerald, Ga.*

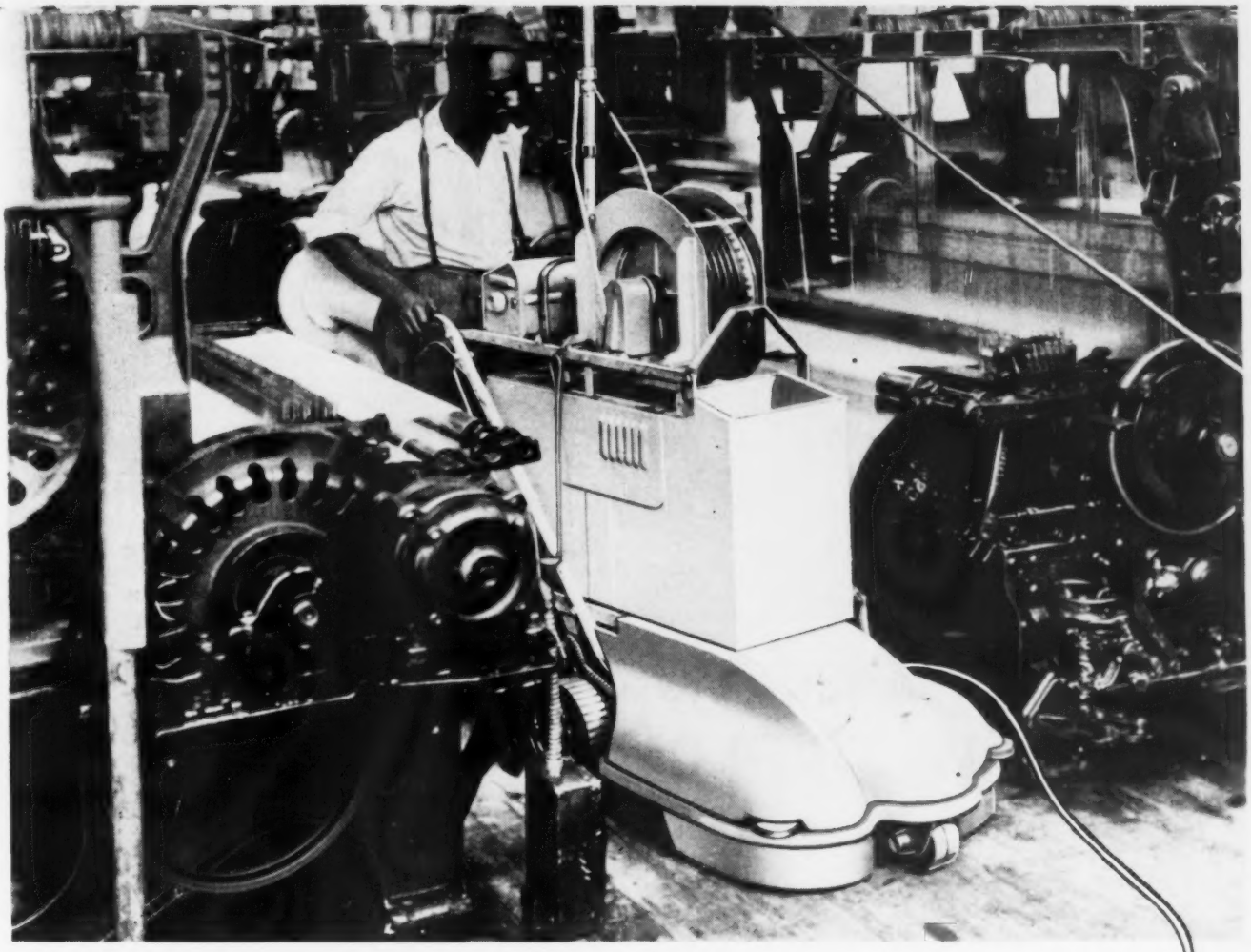


This waste box, which holds two sliver cans for receiving waste, is useful for storing waste around fly frames and spinning frames. Frame tenders and spinners can also use the box for storing cleaning equipment. To avoid mixing waste from different blends of stock, the boxes should be painted different colors.

Emery Wheel Bushing Made of a Coil Spring



It occasionally happens that a new emery wheel for the grinder will have larger bushings than the motor-shaft spindle. If the emery wheel must be used, it can be made to fit the spindle by cutting a short length of suitable coil spring of a diameter to fit the bushing and the spindle. The outer diameter of the spring should fit snugly in the wheel bushing and the inside diameter should permit the spring to be readily slipped on the spindle. When the washer and nut are fastened on tight, the wheel will have a true balance and give satisfactory service. (K-699)



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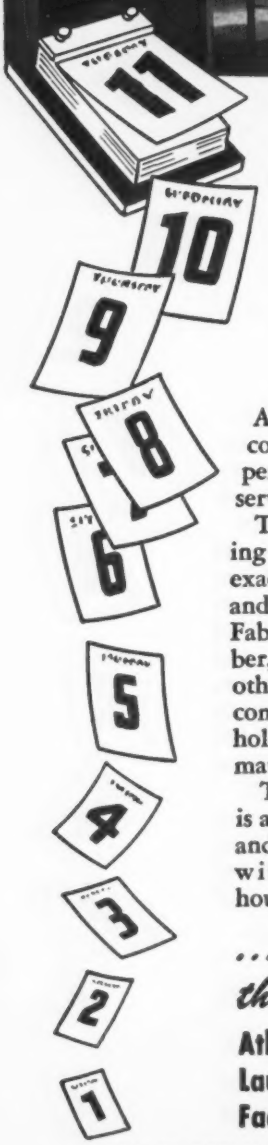

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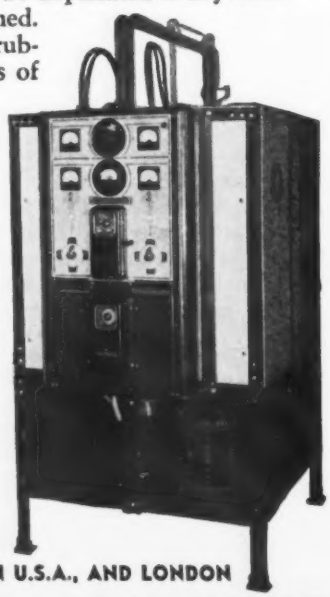

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(*Continued from page* 170)

lem. It seems to me that a series of stiff wire brushes that agitate, in conjunction with air suction, would do the sort of cleaning job we need. Of course, in such a device, the wires would need to be long and very stiff and the vacuum powerful enough to lift all the lint, yarn bunches, and dust raised by the agitating brushes.

I know that with the materials and competent, experienced men that the vacuum-cleaner manufacturers have to work with, this idea or a similar one could be worked out and a cleaner that is superior to any available at present could be made. (R-373)

Tested in Mill's Dye Room Maturity of Cotton

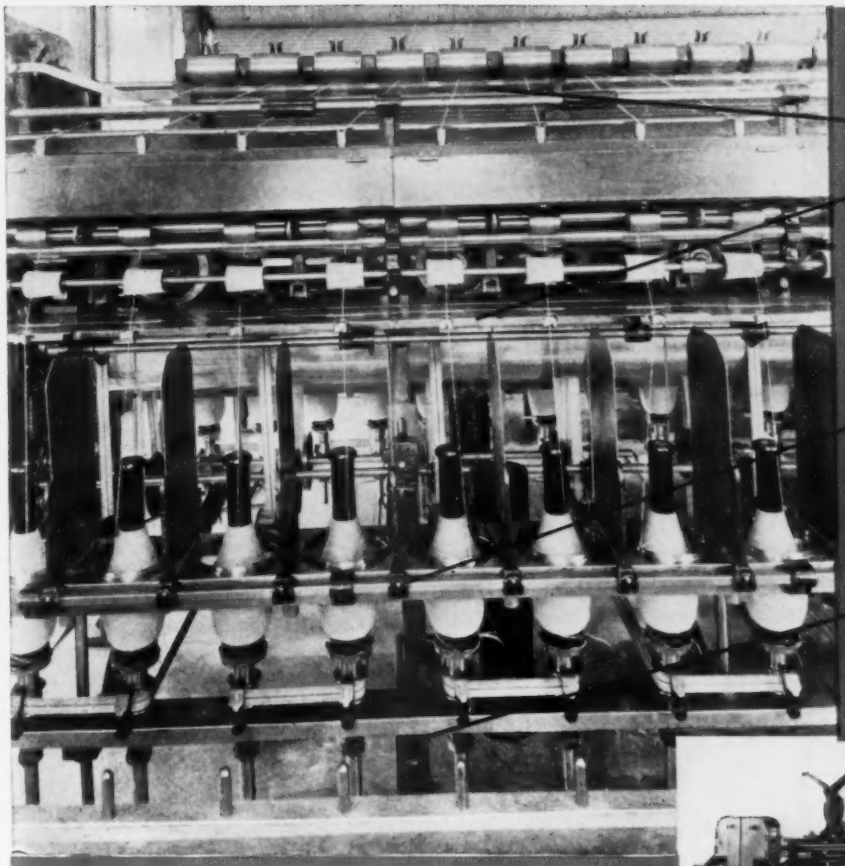
I was considerably interested in the article *New Dye Technique Shows Maturity of Cotton*, in the July issue. When we received our copies of TEXTILE WORLD and read the article, we immediately ran a series of dye tests as outlined in the article. The results were exactly as the color pictures you published. I am inclosing a sample of the dyed cotton so that you can see the striking similarity between the cotton and your pictures. (R-376)

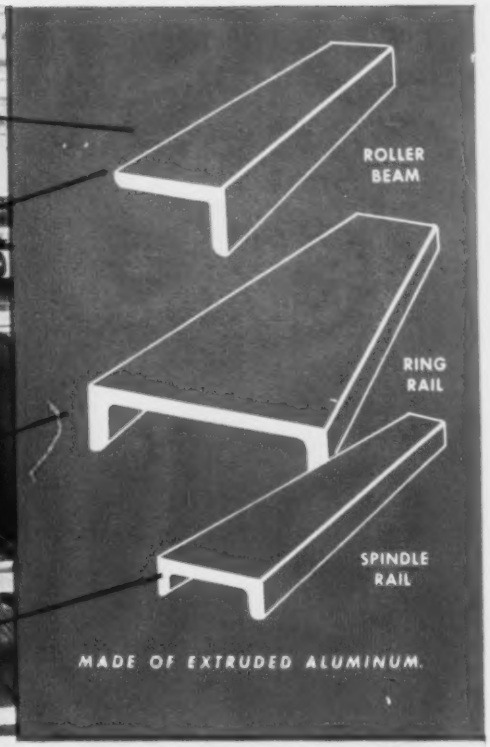
Better-Educated Workers Needed in the Industry

I was very much interested in the editorial *Wanted: Trained Men* in the June issue of TEXTILE WORLD and also Round Table item R-358, Attract More Good Men, Mill Manager Says, in the September issue. My interest was keen because I have tried to do something about the situation scored by these two articles.

During the several years that I was connected with the textile industry, it was very evident that our people needed additional education in all phases of the textile business. However, as long as the textile firms were making money, it was quite impossible to interest them in better-informed personnel. It was not until the depression caught up with the industry that key men in the industry would even admit that possibly they did need better-educated personnel.

This new train of thought persisted in some quarters, and a great deal was accomplished; but during the war, the program was again sidetracked in favor of quick profits with any type of personnel. Of course, some of this action was justified by labor conditions and





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puts aluminum to work in their Simplex wool spinning frame

HEAT-TREATED Reynolds Aluminum extrusions were put to work by the Davis & Furber Machine Company, North Andover, Mass., reducing weight, maintenance and costs. In this new wool spinning frame, ring rails, spindle rails and roller beams are all-aluminum.

Conversion of steel and cast-iron rails to high-strength aluminum reduced weights by over two thirds. Costly machining was all but eliminated. The natural bright aluminum finish requires no painting or protective coating. It will not rust, so maintenance cost is greatly reduced.

Light weight with high strength, less machining, no distortion, freedom from corrosion, smooth natural finish, no staining of yarns from moisture condensation on metal—these advantages of aluminum mean real savings to you. A Reynolds textile engineer will be glad to discuss aluminum as it applies to your products and problems.

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other factors; but the industry should now get on the main line with an educational program and stay there.

I wish to say "amen" to contributor *R*-358's comments, especially to his paragraph on glamorizing the textile industry and the textile schools. Why can't the textile industry see the advantages of a good press? (*R*-377)

Care in Coning Aids in Quilling

Bad quills of filling often result from knots being tied in the coning operation and permitted to rest on the bottom part of the cone. When a knot is located on the cone in this manner, the yarn will break in the quilling operation. To avoid such breakage, the knots should be placed on the cone tops.

Supply spools at the coner should be carefully examined to make certain that there is not a rough place or nick on the rim of the spool that will catch the yarn. Rough handling of wound cones also may cause trouble at the quiller. If the outside layers of yarn are loosened, especially at the rim of the cone, the yarn will not pull off the cone uniformly at the quiller.

A little care during the coning operation pays off at the quiller. (*R*-378)

Varieties of Cotton Are Being Improved

Cotton-quality improvement programs have been effective in recent years in providing the manufacturer with cotton superior in fiber quality in many ways to cotton previously grown in the United States. Statistics show that during the past 15 to 20 yr. the average staple length of the U. S. crop has increased from about $\frac{15}{16}$ in. to better than 1 in.

In many states, staple lengths under $\frac{7}{8}$ in. have virtually disappeared from the crop and have been replaced by staple lengths of $\frac{15}{16}$ in. to 1 in. or better. In some states, long-staple cotton of $1\frac{1}{8}$ in. and longer has given way to a great extent to shorter cottons of $1\frac{1}{32}$ to $1\frac{3}{32}$ in. without a corresponding reduction in spinning value of the crop.

These changes in staple length have now resulted in the production and marketing of cotton crops having a much narrower range of staple lengths than was the case in previous years. The bulk of the recent crops falls within the staple-length range of $\frac{15}{16}$ in. to $1\frac{1}{16}$ in.

Obviously, along with the range in staple length occurring in the crop,

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High-Pressure Grease Gun. Has automatic Pressure Release. 30-lb. capacity.

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Heavy-Duty Pump — Handles heavy and viscous lubricants.

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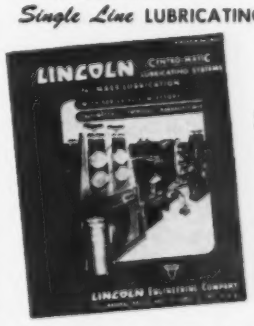

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Machine parts (75 lbs.) in Chicago were needed by a bottling works in Dallas *fast*. Picked up 10 AM the 6th, delivered same day at 5:05 PM. 795 miles, Air Express charge only $18.42. Other weights, any distance, similarly inexpensive and *fast*.

there are ranges in other important fiber properties such as strength, length uniformity, fineness, and maturity. However, as in staple length, the ranges in these properties, although still broad, have no doubt been reduced considerably in recent years.

More than four-fifths of the cotton production in the United States represents only seven varieties. The principal varieties now grown are Acala, Coker, Deltapine, Half-and-half, Mebane, Rowden, and Stoneville. All of these varieties have distinctive fiber characteristics that make them adaptable to specific uses.

The fiber characteristics of the improved varieties of cotton now being widely planted are fairly fixed. Growth conditions, of course, significantly affect fiber properties, as also do methods of harvesting, conditioning, ginning, time of maturing, and weather conditions preceding and during harvesting.

In spite of the modifications in the properties caused by these conditions, a knowledge of the variety of a lot of cotton is helpful in supplementing the customary grade and staple in describing quality. Variety, therefore, is recognized in the cotton industry as a very important factor of spinning value. Many mills, and the cotton merchants who supply them, have learned that specific varieties possess the fiber characteristics desired for best results in the manufacture of definite products. *(R-345) Francis L. Gerdes, Oklahoma City, Okla.*

Semiautomatic Doffing Needed for Spinning

I have been expecting a flood of new improvements on textile machines because of improved metals and experience gained during the war years, but to date I have been disappointed. I appreciate the fact that materials and prices are uncertain, but I should like to know what I can expect in the future. I hear a great deal through the "grapevine," but I should like to get concrete facts on what to expect. I want facts regarding improvements on machines and equipment, and I want them now, even though I have to wait for deliveries.

An improvement I should particularly like to see is in doffing a spinning frame. Some method should be worked out—perhaps a semiautomatic device—whereby the end on the spinning bobbin could be found more readily and with less effort by the spooler tender or the battery hand. *(R-375)*

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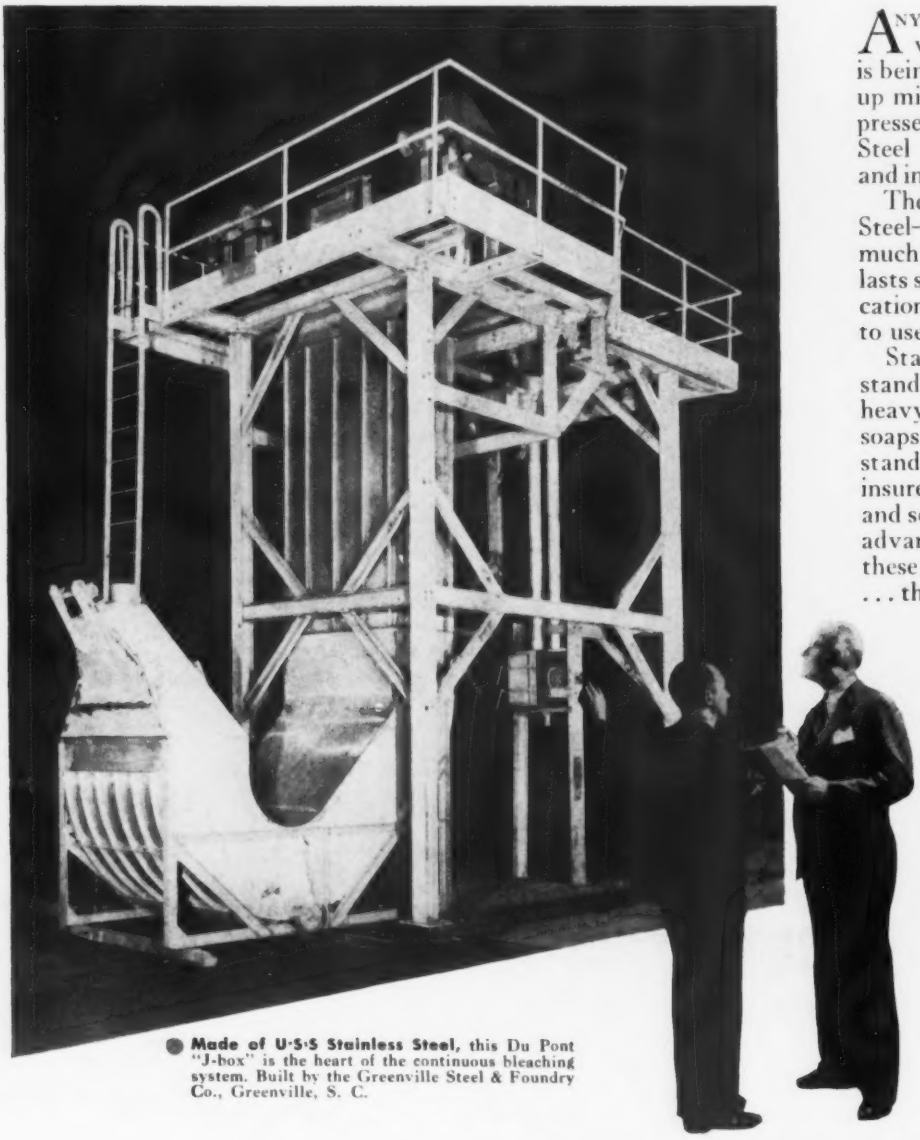

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ANY textile man, reviewing the great variety of fine, new equipment that is being developed to improve and speed-up mill production, cannot fail to be impressed by one striking fact — Stainless Steel is being used in greater amounts and in many more places than ever before.

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Stainless Steel's superior ability to stand up under the wear and tear of heavy runs—to resist acids, bleaches, soaps, dyes and other chemicals—to withstand abrasion and rough treatment—to insure perfect protection against rusting and scaling, all combine to give it marked advantage over other materials. And these properties are inherent in the steel . . . they cannot wear or chip off with use.

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MANUFACTURERS' BULLETINS

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Free FOR THE ASKING

1. Building maintenance problems and their solution by use of Stonhard Co's. resurfacing, patching, and waterproofing products are described in a new folder.

2. Wage incentives, their philosophy and administration, are discussed in a new booklet available from Albert Ramond & Associates.

3. Informative labeling, its value to the producer, and the certification plan of U. S. Testing Co. are described in a recently issued booklet.

4. Hot process-water conditioning, its purpose and operation are described in a new booklet 28B6611 issued by Allis-Chalmers Mfg. Co.

5. Molded and laminated plastics, insulating materials, and metallurgical materials made by General Electric Co. are described in a new booklet.

6. Treatment of municipal and industrial water is completely discussed in a technical bulletin offered to chemists and engineers by Solvay Sales Corp.

7. Sag in V-belts used on multi-V-belt drives and its effect on belt lengths are discussed in a recent bulletin issued by B. F. Goodrich Co.

8. Portable hydraulic elevating tables, a description of their construction and use, and a list of models are contained in a booklet available from Lyon-Raymond Corp.

9. The elastic hemming and inserting machine of Willcox & Gibbs Co. is described in Bulletin 833.

10. Centrifugal pumps of the single-stage, inclosed-impeller type made by Goulds Pumps, Inc., their specifications and performance, are described in a new booklet.

11. Bad lighting is compared to rainy-night conditions in a folder issued by Edwin F. Guth Co., manufacturers of fluorescent-lighting fixtures.

12. Cleantex and Clearsize laundry starches, their properties and application, are discussed in a booklet offered by National Starch Products Co.

13. Scientific management publications of American Management Association are listed in a recently issued catalog.

14. Steam purifiers, their construction, application, and operation, are discussed in a new booklet available from Cochrane Corp.

15. A table of gages and needles for full-fashioned hosiery, including 60 and 66 gage, has been issued by Hatch Textile Research.

16. Selective humidity control by the Kathabar system and its contribution to air-conditioning systems are described in a new booklet of the Surface Combustion Corp.

17. Rubber-base masonry coating, Para-Stone-Tex, for protection of masonry is described in a folder available from Truscon Laboratories.

18. A small Coleman spectrophotometer for routine spectrochemistry is described and illustrated in a booklet offered by Burrell Technical Supply Co.

19. Corrosion-resisting products of Duriron Co., their properties and application, are listed in a new folder.

20. Quality control by inspection of material passing through the plant, with suggested forms and an inspector-training course are described in a folder available from North American Phillips Co.

21. Roller-bearing spindles of Platt Bros., Ltd., are described in a recently issued folder.

22. Herringbone gear units of Link-Belt Co. are completely described in a new data book. Data on selection hp. rating, specifications, and application are included.

23. Rubber mats and matting of B. F. Goodrich Co. are described and illustrated in a new folder.

24. "Interpretation of Analysis for the Layman" is the title of a booklet issued by Nopco Chemical Co., Harrison, N. J. Helpful information is included for those working with industrial chemicals, including a glossary of terms and common methods of analysis of surface-active agents.

25. A model medical department for a plant having 1500 employees is de-

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27. The motor-operated stiffness tester recently developed by W. & L. E. Gurley is described in a new booklet 1430.

28. A fork lift truck which can stack at right angles in an 8-ft. aisle is described in a folder available from Crescent Truck Co., Lebanon, Pa.

29. Flow-rate measurement of liquids and gases by Flowrator meters is fully discussed in a booklet offered by Fischer & Porter Co.

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32. Fork lift trucks and industrial tractors of the Towmotor Corp. are illustrated and described, and their operating data listed, in a portfolio which covers the entire line.

33. The electric hand cleaner manufactured by Ideal Industries, Inc., capable of blowing, vacuuming, spraying, and drying is described in an illustrated folder.

34. Pneumatic control valves and controller accessories made by Foxboro Co. are listed and fully described in a new booklet. Operating and application data are included.

35. Aftercoolers for air-power and gas-distribution lines are described in a booklet issued by Ingersoll-Rand Co. Layouts and application data are included.

36. Carbon tetrachloride, its specifications, physical properties, testing, uses, applications, and much other data are fully discussed in a booklet issued by Stauffer Chemical Co.

37. Stainless-clad steels of Lukens Steel Co. are fully described and applications listed in the company's bulletin 338.

38. Data sheets on several aspects of water treatment, as scale, corrosion, colloids, etc., are available from American K.A.T. Corp.

39. The over-end magazine cone creel for high-speed warping is described in a folder offered by Sipp-Eastwood Corp.

40. Silent chain drives for fractional-horsepower drives, their use and selection, are discussed in booklet 2010 of Link-Belt Co.

41. Quick couplings, caps, and allied products, their specifications and application, are described in a booklet offered by Roylyn, Inc.

42. Synthetic organic detergents for all purposes are fully described in a booklet available from Miranol Chemical Co., Inc.

43. Smoke indicators to sound an alarm when smoke reaches the point of violation of city ordinances, for use with oil- and stoker-fired equipment, are described in a folder issued by Ess Instrument Co.

44. Aloyco corrosion-resistant valves, their design, specifications, and applications, are discussed in illustrated catalog No. 47 of Alloy Steel Products Co.

45. The permanent non-electric magnetic pulley of Eriez Mfg. Co. is described in a new booklet.

46. Lumber which is preservative-treated or made fire-retardant, and its application are discussed in a folder available from American Lumber & Treating Co.

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55. Gelatine for warp slashing is discussed in a recent issue of *Warp Sizing Specialist*, publication of Chas. B. Johnson Machine Works.

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Lestershire aluminum bobbins are the only bobbins for high speed winding of nylon or other high tension synthetic yarns. Improve winding of all yarns.

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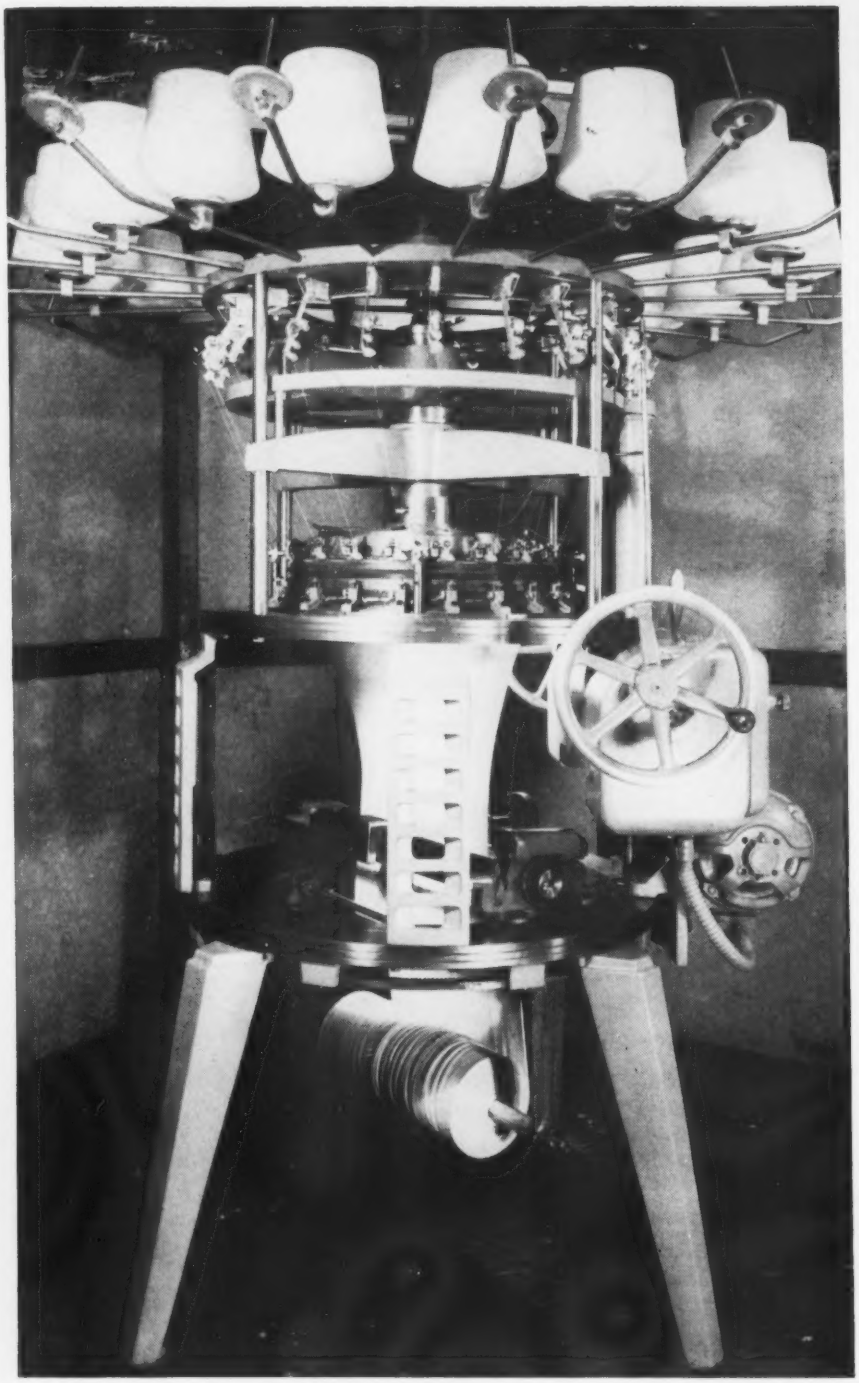

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Questions AND Answers

Worsted Burling Cost Is Figured by the Cut

Technical Editor:

Can you advise us of the usual method of burling in a fancy worsted mill and give us some idea as to the expense normally involved in this operation? (9204)

Most fancy worsted mills pay their burlers either a straight day rate amounting to $35 to $40 a week or a piece rate ranging from $1.25 to $1.75 per cut, depending upon the location of the mill. After the fabric is burled, the usual practice is to examine and perch it for the mender. The perchers mark with chalk all imperfections that are to be mended. Broken picks are counted in quarters or eighths of a full mispick; that is, a cut of cloth that has one full mispick, one half and two quarters would have a total of two mispicks. The mending cost for a full mispick would run from 50¢ to $1.50, depending upon the type of fabric.

These prices are figured on cloth finished 56 to 58 in. wide. Harness skips are figured on the cost of a mispick plus the cost of a double pick (double picks range from 6 to 10¢ each). A thread out in a warp runs from 25 to 50¢ per yd.

Other imperfections are also counted by the percher and marked on a ticket from which the mender is paid. In some small mills the menders are paid day pay plus a bonus for each cut mended.

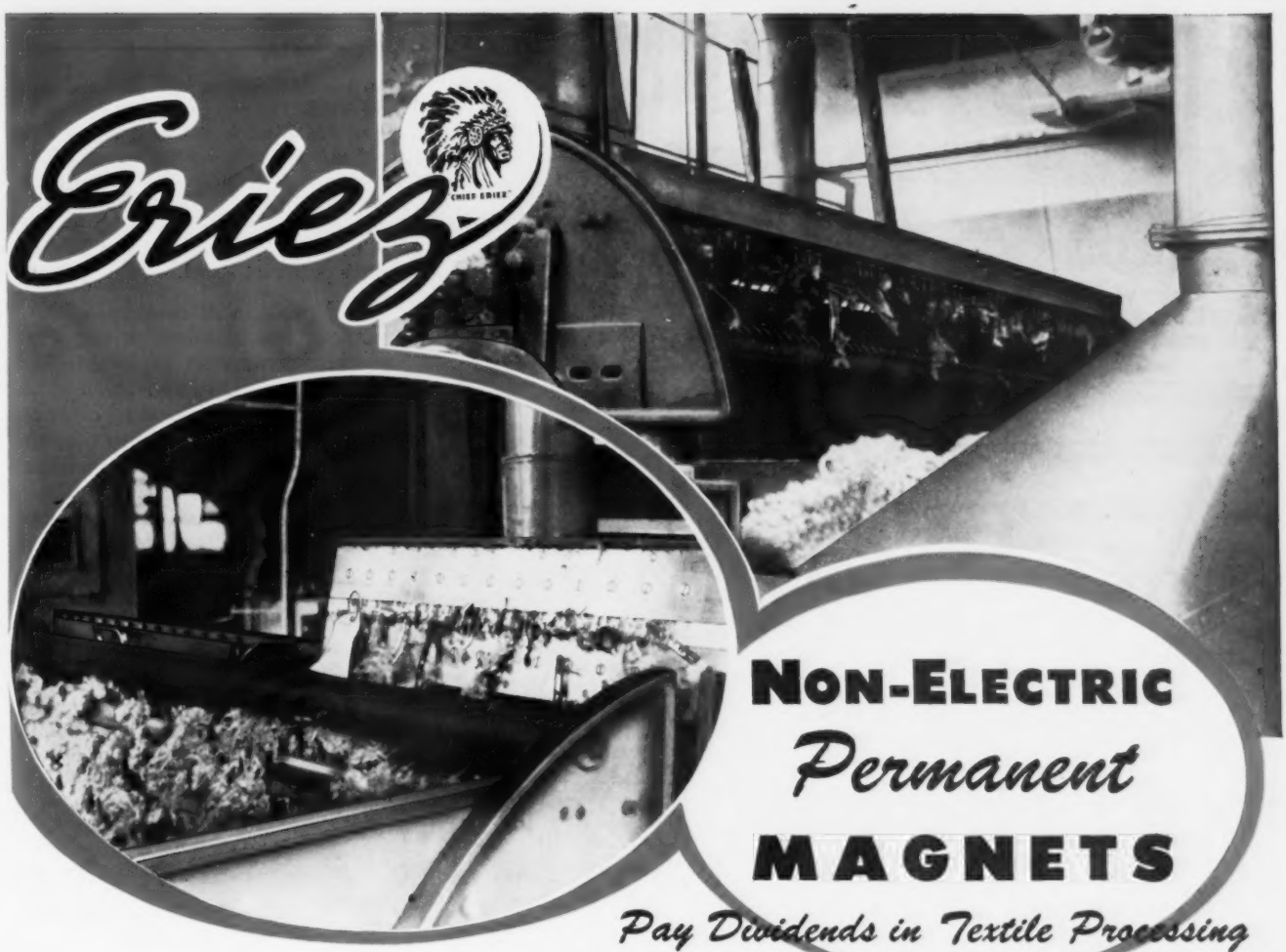
Cotton or Wool Card Processes Rayon Staple

Technical Editor:

We are seeking the latest information on processing rayon staple and are particularly interested in methods of eliminating static electricity during processing.

One difficulty we have encountered is insufficient condensing of the center of the lap.

We should also appreciate your help in assessing the advantages of roller and clearer card as compared with revolving-top-flat cards for processing rayon alone



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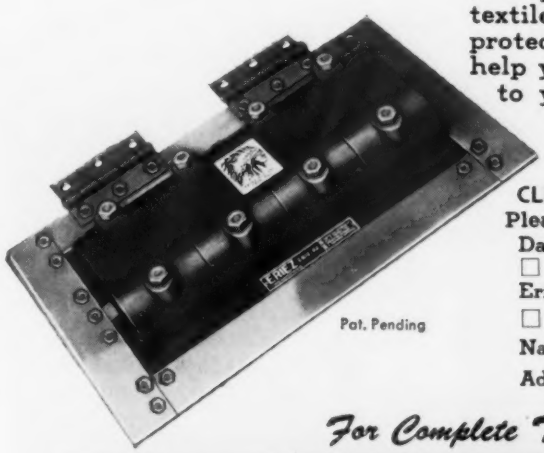

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If you want quick delivery, remember we maintain large stocks of pins that can be furnished to your requirements.

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A User Writes

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WILLIAM

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and blends of cotton and wool and rayon and wool. In the wool blends, we use about 33⅓% wool; and most of our rayon is 1 7/16-in. staple, 1.5 denier.

What is your opinion as to the approximate weight per hour of the materials mentioned that should be put through both types of cards? Can you recommend setting points for a cotton card? (9186)

Your problem of eliminating static electricity can be solved in two ways: by static eliminators or by adequate control of humidity and rayon stock. Static eliminators applied to cards are just beginning to come into use, and most mills now control static by means of humidity.

Proper opening and picking depend largely upon the amount of moisture in the rayon fibers. Generally, the humidity of the opening room and picker room should be maintained at 45 to 50%. . German researchers, who made quite a study of methods of processing rayon staple (TEXTILE WORLD, March, page 133), recommended the use of a heated mixing chamber after the first opening machine (a blending feeder) and before the next two opening machines (also blending feeders). The purpose of the mixing chamber, in which the stock remained for 24 hr., was to dry out the rayon until it contained considerably less than its standard regain of 11%. However, 24-hr. ageing in a room controlled to 50%, or lower, relative humidity should be sufficient to permit the moisture content of the unbaled rayon to become adjusted to processing conditions.

Humidities for favorable processing are about as follows:

Opening room ....(about)	45 to 50%
Card.....	50
Drawing and roving	56
Spinning	53 to 55.

Rayon staple that has been properly opened and lapped and that is carded at a reasonable rate on a cotton card should not cause significant trouble with static under the humidity conditions mentioned.

The puffiness in the middle of the lap is probably caused by uneven distribution of the rayon as it is fed from the picker beater to the screen (condenser section). Other causes could be faulty loggerheads or bent lap pins on the picker. If the loggerheads and lap pins are in good condition, it would be well to check the evenness of feed across the width of the condenser section. It may help to adjust the flow of air so that the stock is blown more toward the top of the screen.

The puffiness is usually due to the fact that feeding is heavier at each end

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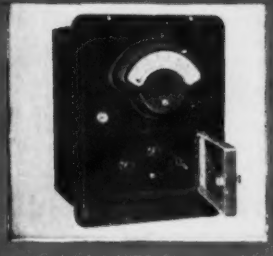
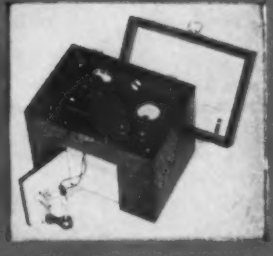
Practically every major advancement in modern glass electrode pH control has been pioneered by Beckman — the simplification of glass electrode equipment from a complicated laboratory set-up to today's practical, compact equipment . . . the introduction of completely automatic pH indication, recording and control . . . the development of High pH and High Temperature Glass Electrodes . . . these and many other Beckman-pioneered advancements make Beckman pH Equipment the most advanced obtainable.

There's a Beckman pH Instrument for every requirement



THE BECKMAN MODEL R provides completely automatic large scale process control. Operates on standard AC current. Gives continuous pH indication and operates standard recording and regulating instruments for complete and continuous pH control.

THE BECKMAN MODEL G is particularly recommended for advanced research and laboratory pH investigations. It features an unusually wide range of special glass electrodes to meet every research and laboratory requirement.



THE BECKMAN MODEL H combines compact portability with full AC operation. Recommended for industrial applications convenient to standard AC current supply. Uses standard Beckman Glass pH Electrodes.

THE BECKMAN MODEL M combines simple operation with complete portability. Its entirely self-contained power supply is a vital feature in many plant and field applications. Uses standard Beckman Glass pH Electrodes and accessories.

BRING YOUR pH PROBLEM TO US

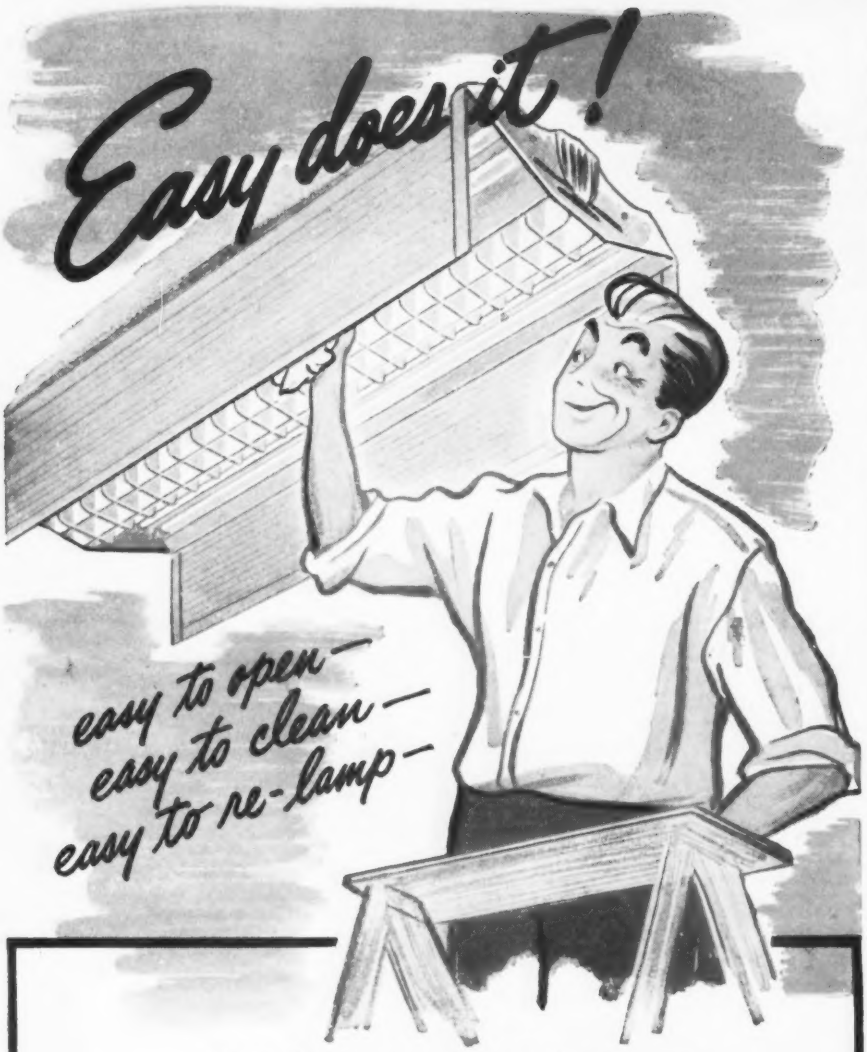
Our trained engineers will gladly study your requirements and make recommendations on the type of equipment best suited to your particular needs. No obligation, of course.

Send for this helpful free booklet! "What Every Executive Should Know About pH" — a non-technical discussion of pH, what it is, how it's used. A copy will gladly be sent you on request.

BECKMAN INSTRUMENTS
National Technical Laboratories, South Pasadena 12, Calif.

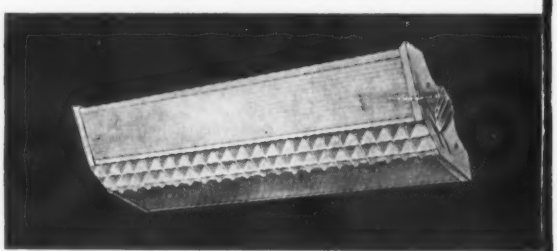
BECKMAN

INSTRUMENTS CONTROL MODERN INDUSTRIES



The VANGUARD

Newest SILV-A-KING Fluorescent Fixture . . . for commercial installations



No more dangerous high-ladder gymnastics . . . no more fancy tools . . . no more lacerated fingers or strong language! The Vanguard opens as easily, quickly, and safely as your fountain pen—for inspection, cleaning, or re-lamping.

For assurance of minimum maintenance time . . . Specify the Vanguard!

I. B. E. W., A. F. of L. • Listed by Underwriters' Laboratories, Inc.

Yours for the asking, "Vanguard" Bulletin No. 447FV

SILV-A-KING LIGHTING EQUIPMENT

BRIGHT LIGHT REFLECTOR COMPANY, INC.

Subsidiary of Bridgeport Pressed Steel Corp.

FAIRFIELD AT STATE • BRIDGEPORT 5, CONN.

of the condenser section than in the middle. An easy way to remedy this condition is to install a guide plate at each side of the picker between the beater and the screen so that stock is guided away from the ends and toward the middle of the screen.

Either the roller card or the revolving-top-flat card may be used for processing rayon or blends such as you described. At present, both types of cards are being used; and undoubtedly you would use whichever card you have, rather than buy the other type.

The cotton card has a distinct advantage in economy of operation, particularly as regards the labor cost per pound. The woolen-card production should be held to approximately 20 lb. per hr. for best results on rayon, and cotton-card production should not exceed 10 lb. per hr. However, one operator attends perhaps 30 or more cotton cards; whereas, one and sometimes two operators are required to attend one woolen card.

The following settings should be satisfactory for cotton cards:

Lickerin to cylinder	0.007 (in.)
Back flats	0.012
Front flats	0.009 or 0.010
Doffer to cylinder	0.005 or 0.007
Doffer comb	0.012
Screen to cylinder	0.039
Back plate to cylinder (top)	0.012
Front plate to cylinder	Set to prevent strips.

These Processes Used For Printing Woolens

Technical Editor:

Please send me a copy of TEXTILE WORLD'S wool flow chart. Will you advise me as to where the operation of printing would fit into this chart? I should appreciate your listing the proper operations in order, starting with inspecting and burling. (9207)

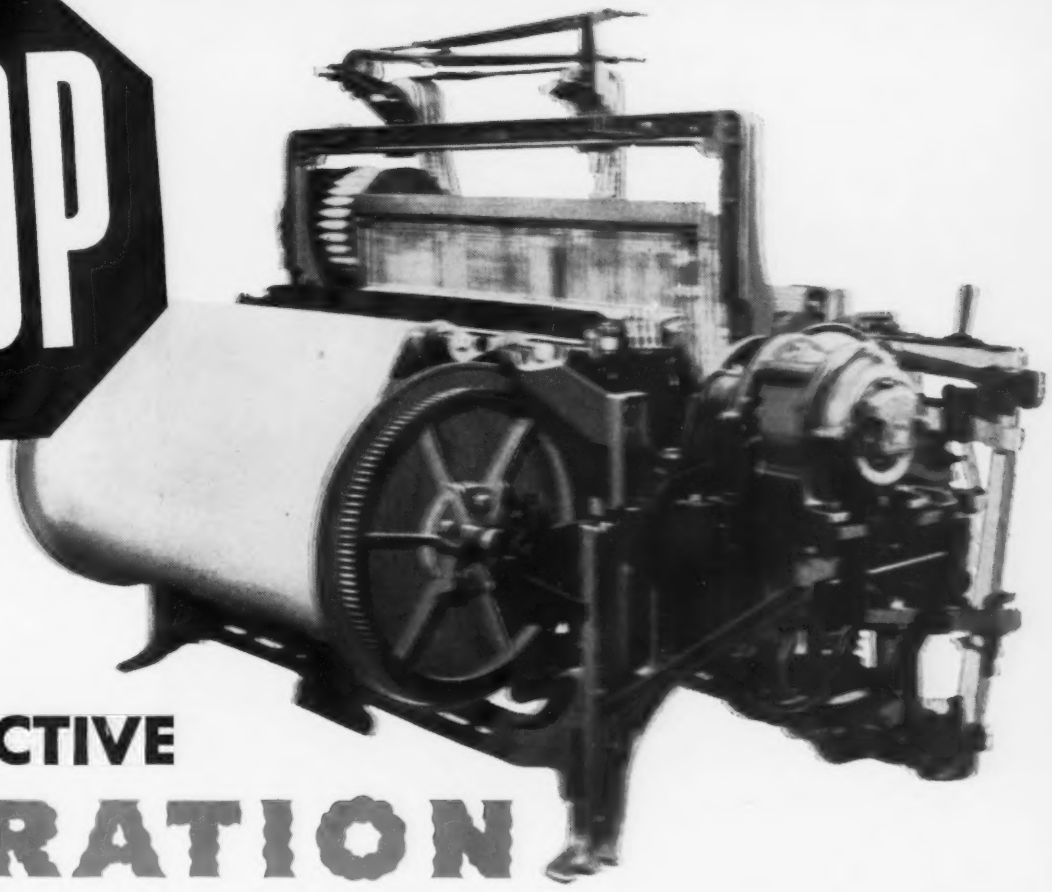
Operations involved in printing woolen fabrics are:

1. Discharge printing on dyed ground:

Singe
Crab
Scour
Cuttle
Chlorinate
Water wash
Dye
Cuttle
Extract
Dry
Shear
Brush
Inspect
Frame
Print
Wash

(*Continued on page 198*)

STOP



DESTRUCTIVE VIBRATION

Steady loom crankshafts with two extra bearings. Eliminate the "Whip" of picking motion with two more camshaft bearings. Add adjustable stop-motion supports that stay tight. Tie crankshaft and camshaft together to stop improper meshing of gears. Brace loom sides with a rigid assembly.

You can accomplish all this with installation of patented Hunt Spreaders on your present looms.

Our factory-trained erectors can install Hunt Spreaders on your looms—whether fifty or five hundred—with a minimum of interruption. It's easier than you think. Write or wire today for information.

Would you like a copy of our latest catalog?
It is yours for the asking.

HIGHER LOOM SPEEDS

MORE PICKS-PER-MINUTE

FINER CLOTH

GREATER PRODUCTION

HIGHER PROFITS

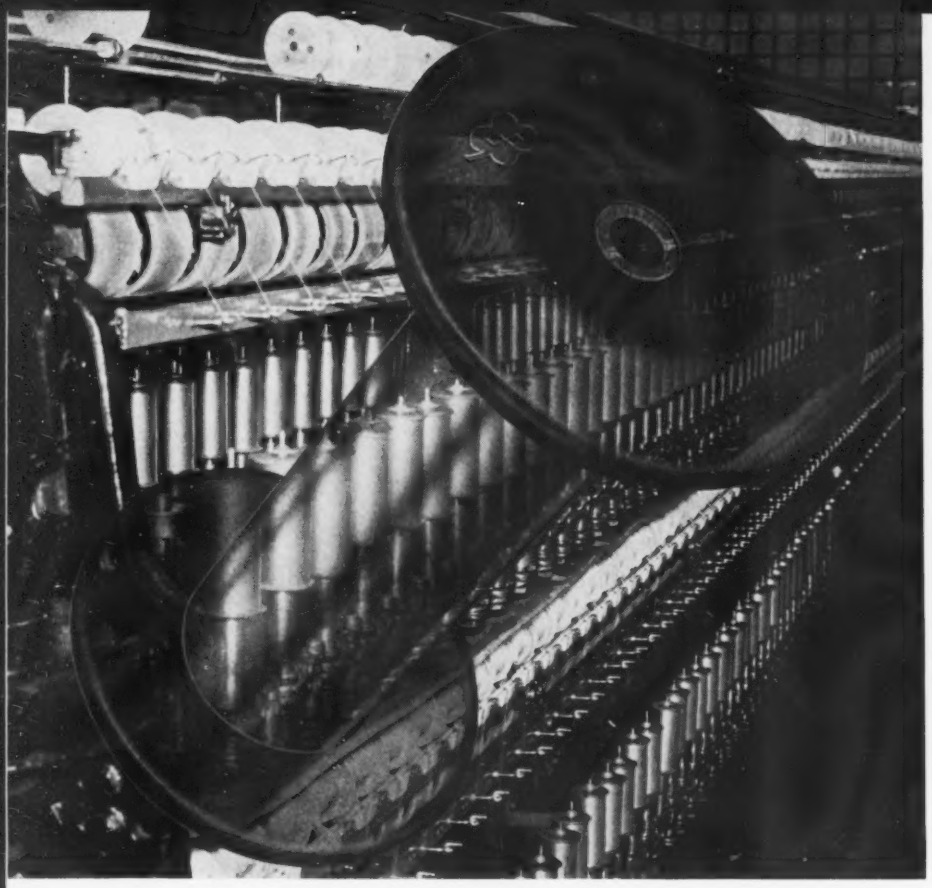
Hunt SPREADERS

• ADD YEARS TO LOOM LIFE •

Companion products to Hunt Spreaders which also carry the Hunt name include Motor Drives, Flywheel Drives, Centrifugal and Gear Pumps, Size Kettles and Hydraulic Presses.

HUNT MACHINE WORKS, INC.

SUCCESSORS TO
MOUNTAIN CITY FOUNDRY AND MACHINE CO. AND HUNT LOOM CO.
200 ACADEMY STREET TELEPHONE 200 GREENVILLE, SOUTH CAROLINA



Back of every great development in Textiles stands the Bobbin. Photo courtesy R. K. Laros Silk Co.

An Engineer designs a wonderful new spinning machine, faster than any machine known in the Industry.

Ordinary Bobbins subjected to such super-speeds would literally shake themselves and the machine to pieces.

To meet this condition Cloverleaf-Freeland develops a Bobbin so amazingly precise, so carefully balanced that even at high speeds it seems to be standing still.

This is just one example of the manufacturing skill of Cloverleaf-Freeland—skill that builds great bobbins.

CLOVERLEAF-FREELAND CORP.
Hazleton, Pa. Honesdale, Pa.

CLOVERLEAF-Freeland BOBBINS

Dry
Inspect
Frame
Fold
Age
Wash
Dry
Inspect
Frame
Fold

2. Blotch printing on white ground:

Singe
Crab
Scour
Cuttle
Sulphur stove
Wash
Cuttle
Chlorinate
Wash
Extract
Dry
Shear
Brush
Inspect
Frame
Print
Age
Wash
Dry
Inspect
Frame
Fold

A Control Laboratory Is Expensive to Install

Technical Editor:

We operate 35,000 spindles and 400 plain looms in Shanghai, China, our production being mainly on sheeting from 21s warp and filling. Our mills were damaged considerably by the Japanese during the war; and in our present program for bringing them back to standard condition, we have included plans for a good control laboratory. Hence, your article Laboratory Control Improves Mill Operation in the June, 1946, issue was of profound interest to us.

We have a check-test laboratory equipped with a few instruments such as a vertical yarn-breaking-strength tester, grain scales, and twist counter. So far, we have not tested laps, sliver, roving, or cloth.

Will you supply us with a list of the various instruments we need? (9203)

Putting a control laboratory into operation depends upon several factors, foremost of which are:

1. The standards and tolerances permitted by the customers of the mill.

2. The amount of money that the mill is willing to spend on the project. (Laboratory equipment is rather expensive, and technicians must be trained and paid. It is sometimes difficult to show immediate returns on such an investment, since results can-

IF YOU'RE SEEKING SAVINGS

in *CONSTRUCTION* and *MAINTENANCE*

here's the place to look!

If rocketing construction costs have brought you budget problems, let Koppers pressure-treated wood solve them. In applications from foundations to roof decks, it brings *present savings* in building costs—*future savings* through long, trouble-free life and low maintenance.

PERMANENT FOUNDATION WORK. Koppers pressure-creosoted piles provide high load-bearing capacity at low cost. Preservative treatment permits cut-offs to be safely made above water table.

ROT-RESISTING FLOORS. A wood floor or sub-structure on or near the ground faces a decay threat. Koppers pressure-treated wood gives dependable protection against this hazard.

ENDURING PLATFORMS, WALKS, STEPS, and OVERPASSES. Koppers pressure-creosoted wood protects against decay, which is the primary cause of much wear and mechanical failure. It makes outside structures serve longer.

FIRE-RETARDANT FRAMING. Koppers fire-retardant treatment, applied to vulnerable building members, gives a high degree of protection against fire, dependable resistance to decay and insect attack as well.

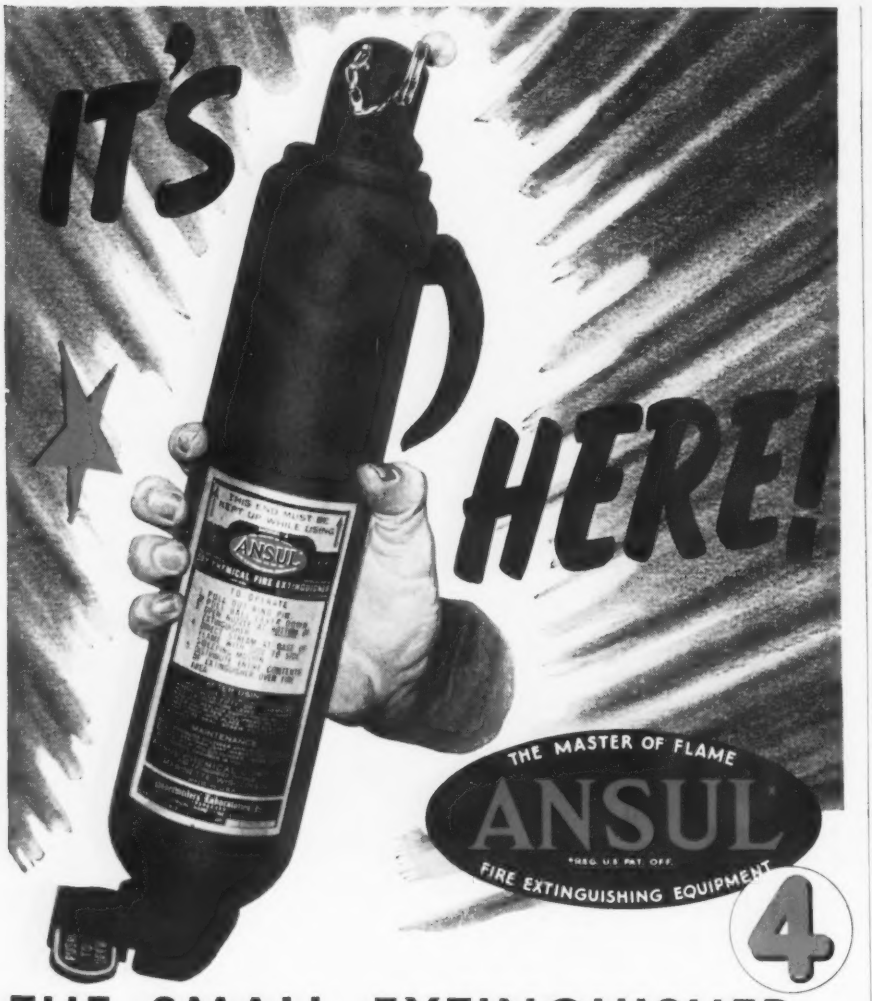
DECAY-DEFYING ROOFS. Wherever humid atmospheres create a decay hazard, Koppers pressure-treated wood provides essential protection for long dependable service.

K
KOPPERS

PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC:

PITTSBURGH 19, PENNSYLVANIA



THE SMALL EXTINGUISHER . .

WITH THE *MIGHTY PUNCH!*

FOR FIRE HAZARDS THAT DO NOT DEMAND LARGER EQUIPMENT . . .

The new ANSUL 4 Dry Chemical Fire Extinguisher has fire stopping effectiveness far in excess of any other extinguisher of comparable size. Its compact size makes it ideal for locations where space is limited. The ANSUL 4 is easy to use . . . easy to recharge on-the-spot . . . and again ready to

STOP FIRE FASTER!

MADE BY THE MANUFACTURERS OF ANSUL-DUGAS DRY CHEMICAL FIRE EXTINGUISHERS, MODELS 20, 30, 150A AND 350A.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

not be measured except over a relatively long period of time.)

3. The condition of the mill machinery. (Close control may be difficult if the machinery is in poor condition.)

4. The cooperation that the laboratory will receive from the departments of the mill. (This point is perhaps one of the most important things to consider. The laboratory can only check, set up standards, and make recommendations on the basis of test results. It is left with the departmental supervisors as to whether or not use is made of the work done by the laboratory.)

Control tests that probably would help you maintain, within reasonable limits, yarn sizes and cloth weights, improve the efficiency of your machines, and possibly make a slight reduction in waste include:

Picker-lap weight
Card-sliver weight
Regularity of card sliver and strips
Weight and regularity of drawing sliver.
Roving size, twist, lay, and package size
Yarn weight and break
New cloth styles
Warp and filling count in cloth
Cloth width, weight, and break.

Other helpful routine tests that would aid in the operation of your machinery include:

Ends down on roving and spinning frames
Speed tests
Weight of packages.

You would need some or all of the following instruments, depending upon the extent to which you decide to test your mill processes:

Moisture tester (oven for checking the moisture content of cotton, yarn, and cloth)
Direct yarn-numbering balance (or you can use your present grain scales and a yarn-number conversion table)
Lap meter
Automatic roving tester (for twist)
Sliver tester (for evenness of draft)
Breaking-strength testers (one for yarn, another for cloth)
Regain indicator (for the picker room)
Recorders for temperature and humidity.

Of course, an air-conditioned room maintained at standard conditions of temperature and humidity is desirable; but in the absence of such a room, test results can be corrected to standard regain.

YOU KNOW ABOUT "TAILORED" GARMENTS

. . . BUT YOU MAY WELL ASK

WHAT IS

Tailored Color

Tailored Color is the exclusive dyeing of cotton, wool, synthetic and blended yarns by Florence Thread Company to give you the exact color you request—the process being to *actually tailor the color to your specifications,* in the shade and color fastness you require.

Tailored Color yarn offers many advantages, whether you are using it in manufacturing gaily colored sweaters, socks, knit suits, upholstery and drapery fabrics, shirts, woven fabrics or insulated wire.

You are assured, first, of the color yarn you want—color having *controlled quality* which has proved so essential in dyed yarn. Florence's controlled quality begins as soon as our laboratory starts analyzing the color, continuing through the color development and processing.

Second, Florence offers you a Service—color the way you want it . . . dyeing . . . bleaching . . . winding . . . finishing.

Third, Florence Tailored Color yarn is economical—economical because its trouble-free, controlled quality assures quality products for your customers.

Either you supply the yarn to be processed or, if possible, we obtain the quality you want and tailor-color it to your specifications.

Make your product the kind you would want to buy yourself—by using Florence Tailored Color dyed yarns.

FOR TAILORED COLOR WRITE

FLORENCE THREAD CO., INC.

RIVERSIDE • NEW JERSEY

Packaged Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

$40,000 to California Winery
$276,000 to Illinois Steel Casting Mfr.
$22,000 to New York Ice Cream Mfr.
$27,000 to Kentucky Plastics Mfr.
$75,000 to Georgia Rug Mill
Here's how careful buyers throughout industry get
Low-Cost Financing for Machinery and Equipment Purchases
Your Total Cost Per $1,000 Financed
12-Month Terms . . . $37.50
24-Month Terms . . . $77.50
36-Month Terms . . . $122.50

Throughout industry . . . in every part of the country . . . buyers are turning to our low-cost financing plan as a sound, businesslike way to buy the machinery and equipment they need . . . *without* tieing up funds that may be needed for working capital or other uses.

Our Machinery and Equipment Purchase Plan is available to finance all your purchases of new or used machinery and equipment . . . even equipment engineered and built to meet your special requirements . . . at uniformly low cost.

Under this plan, you make a nominal down payment and we supply the balance. You repay us monthly . . . with the help of increased earnings or economies effected by the equipment.

Complete information about the advantages of this plan is yours for the asking. Write or phone the nearest Commercial Credit office listed below. **FOR QUICK ACTION** — *Tell us: (1) the amount and kind of machinery or equipment you plan to buy; (2) how much financing you need; (3) over what period of time you want to spread payment. Frequently the loan is okayed and the money ready the same day.* Write or phone today!

COMMERCIAL FINANCING DIVISIONS:
Baltimore 2, New York 17, Chicago 6, Los Angeles 14, San Francisco 6, Portland 5, Ore.

COMMERCIAL CREDIT COMPANY
Capital and Surplus $80,000,000
BALTIMORE 2, MD.

OFFICES IN MORE THAN 300 CITIES OF THE UNITED STATES AND CANADA

Cost Knowledge

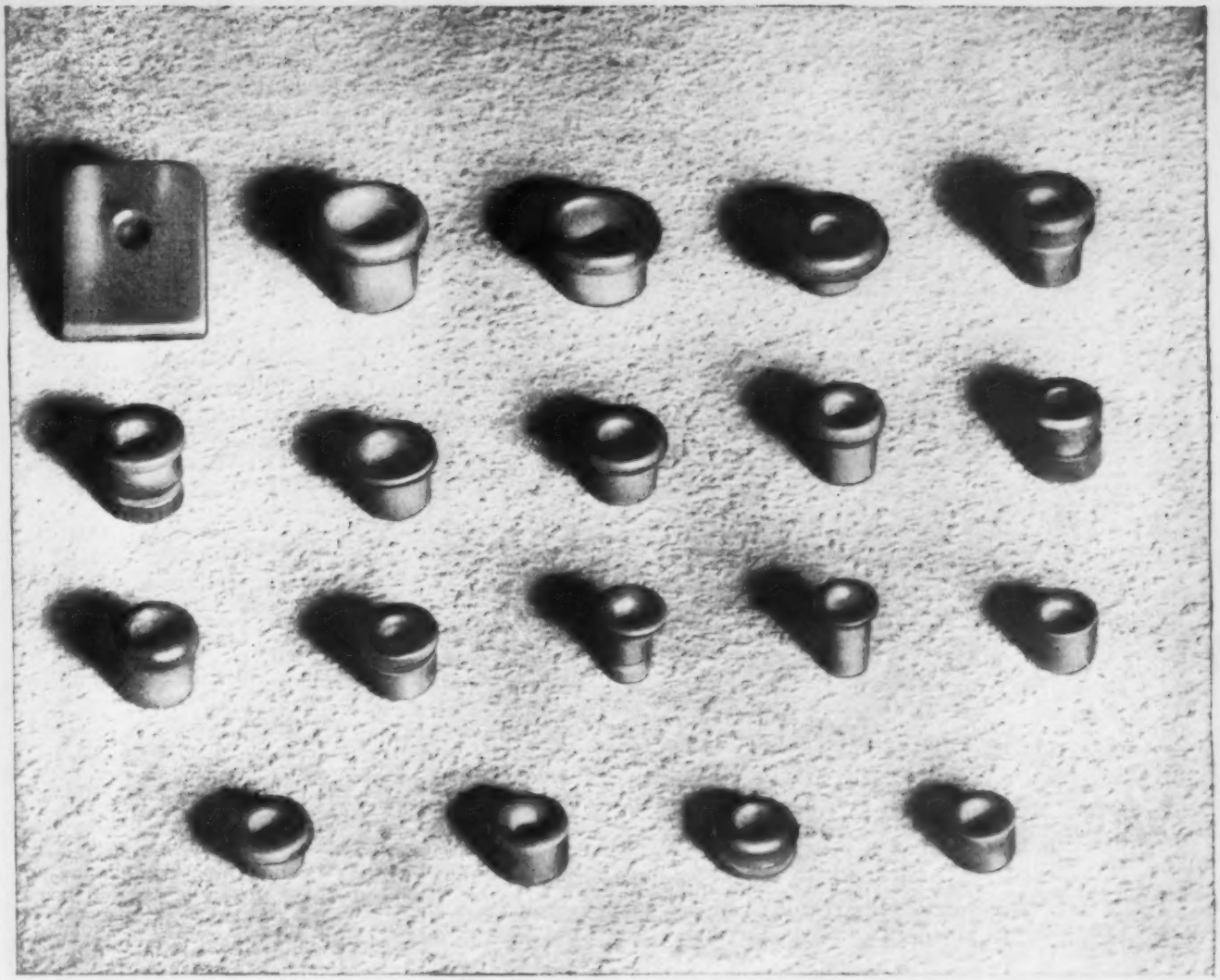
(*Continued from page 155*)

ton. Much of the recent improvement in profit showings can be attributed to the existence of a reasonable balance.

CURRENT OPPORTUNITY. After several years of successfully coping with wartime problems, the industry now is faced with a gradual return to more normal conditions. Its prices are now determined by free markets, with production planning left to the decision of each individual producer. Cotton-mill management faces an opportunity of showing how well it can conduct its affairs. However, according to a publication issued by the OPA in 1946 entitled "Cost Accounting in Industry," only about half the mills were then using adequate cost methods.

Management cannot function efficiently without the data which can be obtained only through unremitting application of modern cost methods. The day has long since past when "costing" consisted solely of mathematical calculations of an historical character. Instead, mill managers now must make in advance careful study of productive facilities, of labor requirements, and of every operating expense. Like the policies followed in planning production efficiently, cost methods must take every factor into consideration and provide a series of standards through which success in the fulfillment of plans may be measured.

Such a program requires attention to many details. Those not familiar with the steps involved sometimes become impatient, perhaps because they fail to realize that these steps merely parallel those incident to actual production. For example, each fabric is woven to conform to its own specifications; and it is through close and careful observation and control over many minute details that the fabrication is performed as planned. The physical components of the fabric are readily identifiable. They consist of a definable number of ends and picks, each of which may be specified in yarn types and counts. However, the complete specifications must include other elements which are vital even though they are not so readily perceivable. These other elements consist of selection of the proper cotton, allowance for wastage, estimation of labor requirements, and the extent of machine utilization. These are all matters that are necessarily considered in production planning. Every mill makes some predetermination of the number of looms to be operated, the quantity of each type of yarn needed, and the output required from each of the preparatory processes before production of any



ILLUSTRATED APPROXIMATELY TWICE ACTUAL SIZE

Test These Snapper Eyelets on Monofilament...

10, 15 OR 20 DENIER NYLON

A few months ago we suggested that manufacturers test AlSiMag 192 Snapper Eyelets on Monofilament. A number of manufacturers purchased sample lots custom made to their specifications and are running tests.

As a result of these tests, several manufacturers have already adopted AlSiMag 192 or AlSiMag 193 Snapper Eyelets as standard equipment on all their machines. Many tests are still in process. All reports to date have been favorable.

One manufacturer told us: **"Your guides have lasted four times as long as any other guide we have tried on this yarn. They show no signs of wear. We do not know how long they will wear but we know they are the most satisfactory and lowest cost guides we have found."**

We have no record of a failure in service of any AlSiMag Snapper Eyelet. Many of these eyelets have been running 24 hours a day for about twelve months.

AlSiMag 193 is an electrical conductor. Properly grounded guides of AlSiMag 193 have overcome many static electricity problems. AlSiMag 192 is a non-conductor. Both guides have the same hardness and resistance to wear.

Sample lots of AlSiMag Snapper Eyelets, made to your specifications, can be furnished at reasonable cost, for testing in your plant under your working conditions. The reports of many leading manufacturers indicate that your tests will show you greatly improved performance, better quality, and lower cost.

ALSIMAG

TRADE MARK REGISTERED U.S. PATENT OFFICE

46TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

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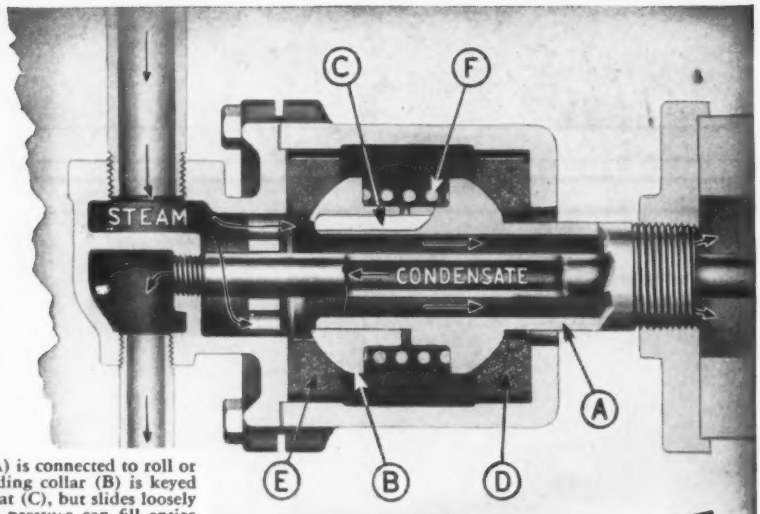
NEWARK, N. J., 671 Broad St., Tel: Mitchell 2-8159 • CHICAGO, 9 S. Clinton St., Tel: Central 1721 • SAN FRANCISCO, 163 2nd. St., Tel: Douglas 2464 • LOS ANGELES, 324 N. San Pedro St., Tel: Mutual 9076



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a businesslike way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

JOHNSON *Rotary Pressure* JOINTS

THE JOHNSON CORPORATION
814 WOOD STREET
THREE RIVERS, MICHIGAN

fabric is assumed. Although not always directly apparent in some of these production plans, labor requirements and machine utilization are necessarily considered.

COSTING PARALLELS PRODUCTION. The methods used in modern costing are so closely akin to those of production planning and control of productive operations that it is difficult to realize that any mill management would fail to comprehend their relationship. Actually, the same basic principles are used in each. The only real difference is that cost calculations extend beyond consideration of output quantities to their dollars-and-cents values through which the amount applicable to every element may be ascertained. But despite the realization by every mill operator that each of his products varies from others to some degree and that the production of each must be planned and controlled accordingly, some operators still believe that they can safely overlook consideration of these variations in such cost calculations as they make and that they can safely rely upon overall averages. Other mill men cling to the idea that, while the occasional services of a professional cost engineer are of value in predetermining individual product costs, there is not much need of following up his calculations during ensuing months to ascertain reasons for or extent of cost variations that may occur.

The textile industry is now in the midst of postwar readjustment—with wage rates at a level approximately three times those of the prewar years, cotton prices close to all-time highs, and replacements and supplies at exorbitant levels. In addition to these self-evident changes in cost relationships, there are those of a novel nature classed as "supplementary wages." It is no longer possible to compute labor cost by considering hourly wages and piecework rates alone, for the average mill must now include the cost of overtime and shift premiums, vacation and holiday pay, social-security taxes, and other forms of indirect wage payments, such as hospital and sickness insurance. Under these conditions, it is more important than ever that mills review their cost methods and find out if they are adequate to cope with current needs.

CALCULATION ELEMENTS. Detailed description and illustration of cost-calculation methods are beyond the scope of this discussion. Briefly, the method is to determine the quantity of cotton required in the production of individual fabrics with adjustment of its market price to care for wastage in process, and to calculate manufac-

Stanteosine

CATIONIC SOFTENER

STANTEOSINE is a mill tested product giving extreme softness using small amounts. Its affinity for fibers gives it greater permanency than other types of softeners.

STANTEOSINE is stable in hard water and in solutions of calcium, magnesium and other salts, making it very adaptable for heavy finishes, especially where weight is desired. It can be used over a wide pH range.

STANTEOSINE has various applications in the processing of silk, nylon, rayon, acetate, cotton and wool fabrics and all types of mixed goods. In the finishing of piece goods, and as a rinse after dyeing on raw stock, yarns and piece goods, STANTEOSINE gives a soft, silky finish free from odor.

REG. U. S. PAT. OFF.

STANDARD CHEMICAL PRODUCTS, Inc.

1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

HIGH POINT, N. C. · LEAKSVILLE, N. C. · PATERSON, N. J.
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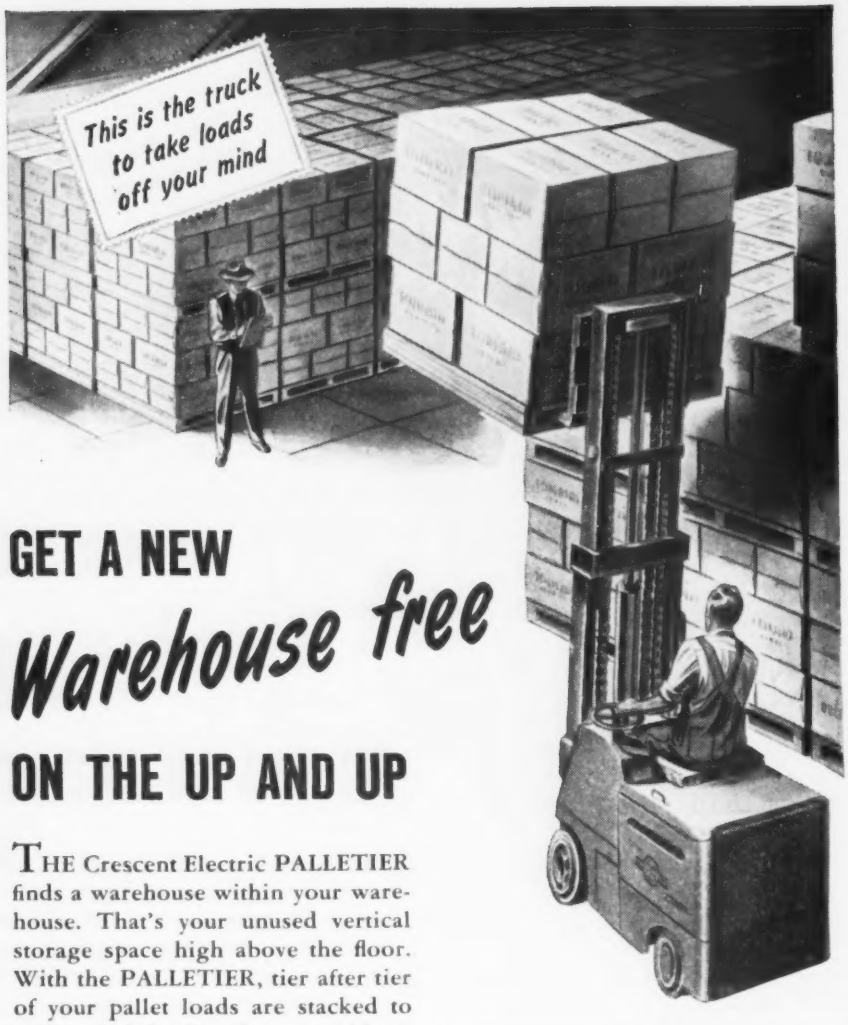

GET A NEW

Warehouse free

ON THE UP AND UP

THE Crescent Electric PALLETIER finds a warehouse within your warehouse. That's your unused vertical storage space high above the floor. With the PALLETIER, tier after tier of your pallet loads are stacked to ceiling height. Up they go without heave ho . . . safely, speedily.

Your loading and unloading time shrinks to a minimum. Up steep ramps, down narrow aisles travels the maneuverable, power-packed PALLETIER. Low in initial cost, low in maintenance costs, it soon pays for itself by slashing your handling costs.

Send for free bulletins illustrating and listing Specifications for 1000, 2000, 3000 and 4000-pound Crescent Electric PALLETIERS.

CRESCENT TRUCK COMPANY
1145 Willow St., Lebanon, Pa.

Industrial Truck and Tractor Specialists Since 1917

FIVE IMPORTANT FEATURES

Only the PALLETIER Has Them All

- **Full Magnetic Contactor Control** protects against forced acceleration—extends life of motor and tires.
- **Complete Stability** with load fully elevated and tilted forward.
- **Battery Power** eliminates fumes and fire hazard.
- **Full Accessibility** to all mechanisms for easy inspection and maintenance.
- **Maximum Visibility**—operator spots and tiers without stirring from seat.

Crescent
ELECTRIC
PALLETIER
REG. U. S. PAT. OFF.

turing costs through the use of cost standards arrived at by careful appraisal of every phase involved. Influencing these standards are such important policy matters as those governing volume of output or extent of plant operation, and those of a production-engineering nature related to production speeds. Other elements in manufacturing cost are determined through careful budgeting of payrolls and overhead expenses. The several steps involved are founded upon budgets of over-all cost at the standard level of operation. These amounts are assigned to individual processes through consideration of their sources and by allocation on equitable bases. These processes are ordinarily classed as "cost centers" but they are actually equivalent to miniature businesses whose products are absorbed by others. Standard costs are computed for each of these products, based upon the amount of expense applicable to a period of time, such as a machine-hour or spindle-week, and the standard production speeds selected for the individual products. It is through assembly of these standard costs, after adjustment for such wastage as occurs in later processes, that the cost of each final product is ascertained in accordance with its specifications.

The value of costs predetermined in this manner is enhanced when they are viewed not merely as a clerical exercise but as an engineering project. As such, the work surveys every phase of a mill's operation and results in a blueprint of the costs and their relationship to planned production. Obviously, it is not possible to foresee the future so accurately as to be exactly correct in all predetermined costs; but the same is true with any plan dealing with the future. It is, however, vitally necessary and useful to observe continuously the extent to which the predetermined costs are actually achieved. It is through this check that the standards serve as instruments of particular value, for they provide a series of guide posts against which it is possible to observe variation, thereby establishing a means for the control of cost.

COSTING SPURS EFFICIENCY. In considering cost, it is well always to bear in mind that there are two definitions of the word. One is "the price paid for an article," and the other is "a loss sustained." It is through adequate knowledge of the first that the latter is avoided. Cotton mills, of course, do not sell their wares in the same condition as they purchase them; but they should recognize that every dollar expended, whether for raw materials, labor, or other items, is merely

(*Continued on page 209*)

Saran BY NATIONAL monofilaments

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For the textile industry SARAN is a promise fulfilled. Fabrics created from these tough, flexible strands are the inspiration for numerous upholstery and drapery applications. They can be seen today in actual service—in hotels and restaurants, theatres and public transportation, in furniture for the home and in the finest automobiles. In diameters as fine as .005", Saran monofilaments have been woven into patterns and textures of infinite beauty. Dirt and chemicals leave them unharmed. Their resistance to wear is unique in the field of textiles.

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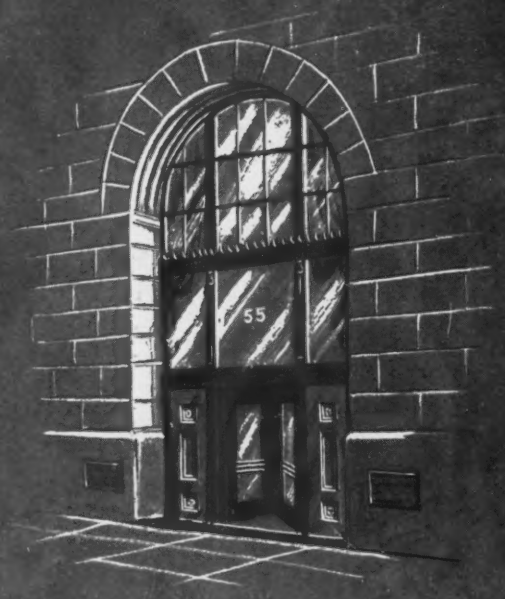

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(*Continued from page 206*)

a reduction of the cash account and an increase of stock in trade.

The ability of any mill to sell its products at prices that bring back production costs in full depends largely upon the effort made to see that each product carries its proper share of every cost element. The extent to which a mill gives advance study to costs and exercises cost control will usually be reflected in the degree to which it produces goods efficiently and economically.

Comb Modification

(*Continued from page 119*)

the dabbing brush are flat for about 1 in. of the brush length, and only $\frac{3}{8}$ in. long. This flattened section dabs the wool just below the points of the pins before the knife is reached.

SMALL-CIRCLE KNIFE. For neppy or burry wools, some method of assisting the fringe to enter the pins of the small circle should be used. Three methods have been tried: a short knife, an extension on the side of the large-circle dabbing brush, and a revolving circular brush.

Of the three methods, the short knife is perhaps the most satisfactory. As it is necessary only to press the wool slightly below the points of the pins, a very small knife can be used. The amount of penetration is only $\frac{1}{4}$ in. deep and $\frac{3}{8}$ in. long. The knife is placed approximately in the center of the set-over and is tapered at the leading end.

The extension on the side of the large-circle dabbing brush is simple and easy to adjust. The extension is as wide as the set-over of the small circle and the leading end is tapered exactly the same as the brush which dabs into the large circle. The tapered part of the extension does not dab into the pins of the small circle but serves to keep the fringe in line with the rest of the wool in the large circle. The remainder of the bristles extend for only 1 in. past the arc of contact and dab slightly into the pins of the small circle.

The method of using a circular brush gives satisfactory results but it has the disadvantage of concealing the wool as it enters the pins, thereby making it difficult to ascertain if the wool is at the correct depth at the arc of contact when the comb is in motion.

EDITOR'S NOTE—This comb modification is still under development at the University of Leeds and is not yet used in commercial production. The method described is suggestive of the possibilities of further improvements in the combing operation.

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Fig. 2228
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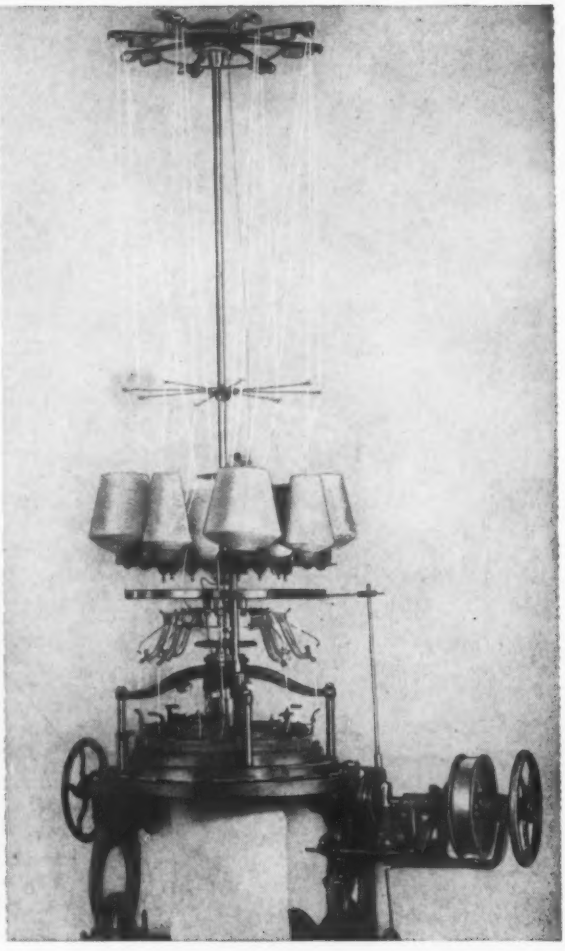

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Wet Chlorination

(*Continued from page 153*)

Preliminary laboratory tests are first run to establish the fact that this particular type of hose is adequately stabilized with 3% chlorine (based on weight of wool). Hence the following quantities:

Weight of wool	100 lb.
Volume of water	300 gal. (U.S.)
Liquor ratio	25:1
Weight of chlorine required	3 lb.

The wool is scoured with a few pounds of soap or synthetic detergent, then rinsed in hot water and in cold water.

The hypochlorite is titrated with standard thiosulphate, and, in this case, found to contain 12% available chlorine by weight—$3 \times 100 \div 12 = 25$ lb. of hypochlorite required. The formulation of the chlorinating bath is as follows:

Sodium hypochlorite	25 lb.
30% sodium sulphamate solution	22 lb.
Wetting agent	½ lb.
Formaldehyde (38%)	3 lb.
Sulphuric acid (66°Be.)	15 lb.

The 30% sodium sulphamate solution is mixed in a wooden, stoneware, or stainless-steel container with about 5 times its volume of cold water, and the sodium hypochlorite is added slowly while stirring. The mixture is allowed to stand about 10 min. with occasional stirring.

The wool is entered into the machine containing water and the machine is run while the wetting agent, formaldehyde, and sulphuric acid are added in order (diluted by pouring into cold water first). The sodium sulphamate-hypochlorite mixture is then added and mixed in.

After the chlorinating mixture is added, the machine is run 10 to 15 min., and the temperature is raised to 110° to 120° F. to complete the exhaustion. In 30 to 45 min., exhaustion is 95 to 98% complete. Starch-iodide paper shows no color change at this stage, and potassium-iodide solution is colored to only a light straw tint.

The bath is dropped, and 1 to 2 lb. sodium bisulphite, dissolved in water, is added to a fresh bath. After running 5 to 10 min. at 100° to 120° F., the bath is dropped and the goods are given one or two 5-min. rinses at 90° to 120° F.

The goods are finally neutralized with 2 to 5 lb. sodium bicarbonate at 90° to 120° F. until they reach a pH of 7 to 8, and are rinsed in warm water.

The treated wool is whiter than the original wool, and may be bleached

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will give them sufficient body for easy handling besides providing a far superior finish in all other respects.

With Eternalure you get exceptional snag resistance, tightened and clarified stitch, adequate dulling and a workable body without undesirable stiffness. Hose are safely handled with a minimum of pull threads.

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further or dyed without employing special techniques.

ALKALINE PROCESS The alkaline process does not employ a "buffer" to slow down the rate of chlorine exhaustion. Hence, the reaction is controlled by slow addition of hypochlorite to the bath, and by maintaining a fairly low temperature. These precautions result in uniform chlorination but are not, in themselves, adequate to insure shrinkage-control.

In the older alkaline-chlorination processes, results varied from batch to batch and from one type of wool to another, and it was frequently observed that all the chlorine was exhausted from the bath with no improvement in shrinkage control.

The secret of success of the alkaline process lies in a special pretreatment of the wool with a chemical known as Alrochlor S. This "conditions" the wool, eliminates variations due to prior treatment, and makes maximum shrinkage control possible.

The amount of chlorine required to control the felting-shrinkage of wool varies with the type and quality of the wool as well as the yarn construction (woolen or worsted; single or plied yarn; amount of twist) and the fabric construction.

The amount of "active chlorine" is always based on the weight of wool to be treated. If other fibers are present, the proportion of wool is used as a basis for calculating the chlorine requirements.

In general, 1½ to 3% active chlorine based on the weight of wool is required. Fine, high-quality wools require 2 to 3% chlorine, while coarser wools require only 1½ to 2%. The minimum quantity required for any particular material must be determined experimentally. Either sodium hypochlorite (soda bleach) or calcium hypochlorite is used as a source of chlorine.

The wool may be treated in the form of top, yarn, or knitted or woven piece goods. The equipment would be the same as described under the acid process.

The following is a typical procedure used for application of the alkaline process on 1/18s worsted yarn in a Franklin-Process package-dyeing machine. Preliminary tests showed that 3% chlorine was satisfactory on this yarn. Therefore:

Weight of wool....	100 lb.
Volume of liquor..	100 gal.
Liquor ratio.....	8.3:1
Active chlorine required.....	1 lb. (= 24 lb. of 12½% sodium hypochlorite)

PRETREATMENT. The wool is first scoured with soap or synthetic deter-

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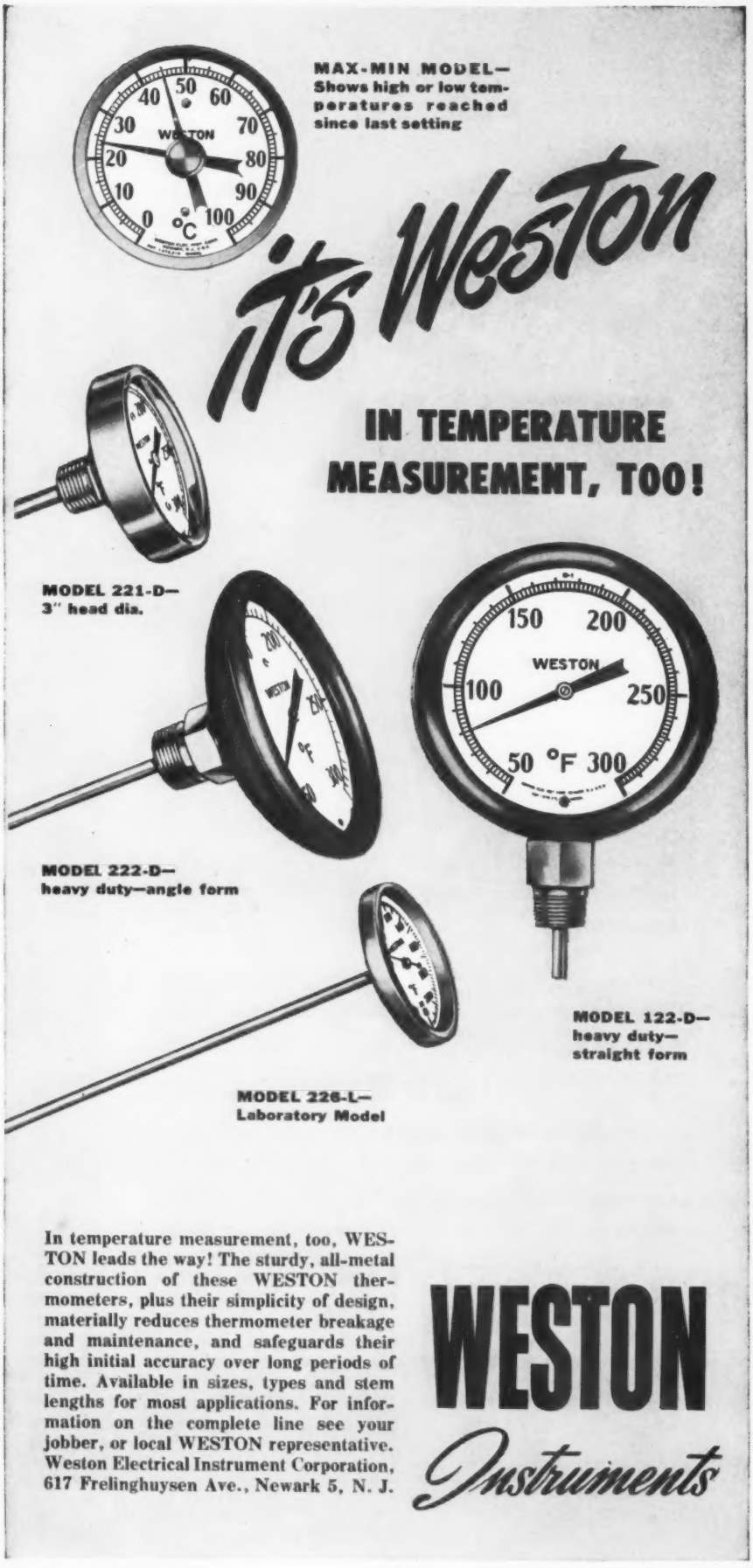
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gent (strongly alkaline builders should not be used), then rinsed carefully in warm water and cold water to remove all traces of soap.

To a fresh bath, add 2 oz. of a non-ionic wetting agent. Dissolve 15 lb. of the pretreating agent in water in a stainless-steel container and add to the bath.

The machine is run 30 min., adding ice if necessary to keep the temperature between 70 and 80° F.

The bath is dropped and the batch is given two 5-min. rinses with cold water; 6 to 7 lb. sodium bicarbonate are dissolved in water and added. After tests indicate that the pH of the liquor is 7 to 8, the bath is dropped and the batch is rinsed once more.

The wetting agent is added, and enough ice to keep the temperature between 60° and 75° F. After running about 3 min. the hypochlorite solution (diluted to several times its volume) is added in small portions over a 10-min. period. The machine is run 20 min. more, making a total of 30 to 35 min. (A test with starch-iodide paper at this point shows no color and only a faint straw color appears with potassium-iodide reagent.) The batch is rinsed with cold water.

AFTERTREATMENTS. The machine is filled with water and 5 lb. sodium bisulphite (dissolved in water) is added; 4 lb. sulphuric acid are poured into water and added to the batch. The machine is run 10 min. at 80° to 90° F., and the bath is dropped.

The batch is rinsed, neutralized with 5 lb. of bicarbonate, and rinsed again. If the goods are to be dried before dyeing, it is advisable to acidify at this point with a little acetic acid.

The wool has a light tan color, and may usually be dyed without bleaching. For whites or light shades, the wool is bleached about 2 hr. with 1-volume hydrogen peroxide at 140° F.

Wool thus treated exhibits excellent level-dyeing properties. In general, dyeing formulations are about the same as untreated wool, and no special precautions are necessary. Treated and untreated wool should not be dyed together in the same bath, since differences in dyeing rates will result in radically different shades. If dyes which withstand chlorination are selected, the wet-chlorination treatment may be carried out *after* dyeing.

In the processes described, felting shrinkage is brought under control, but, for complete shrinkage-control of knit goods the finisher must see that the goods are finished at the stabilized dimensions. Any stretch imparted during drying or boarding sets up strains in the fabric. The relaxation of these strains on wetting-out in warm

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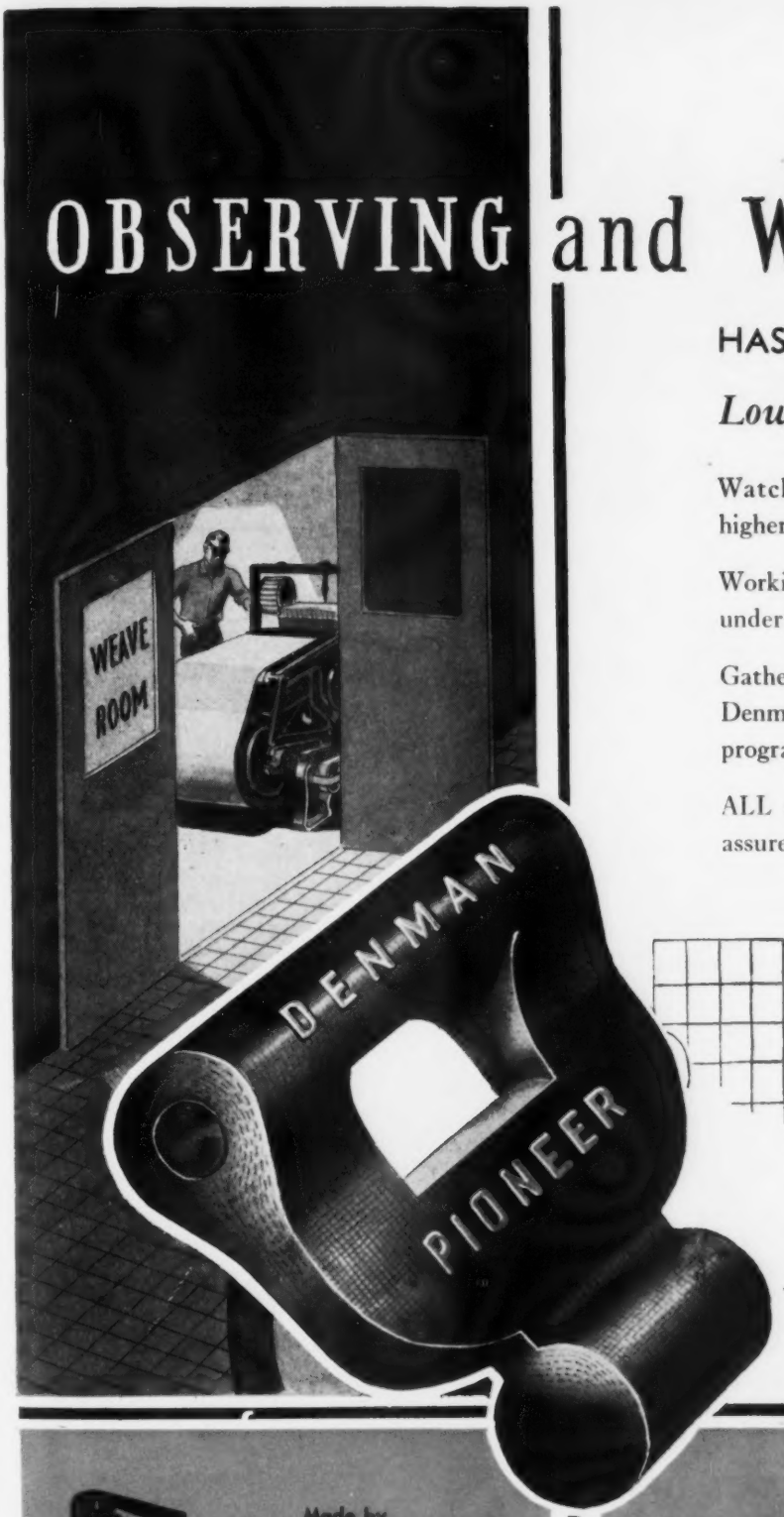

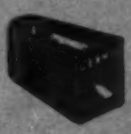

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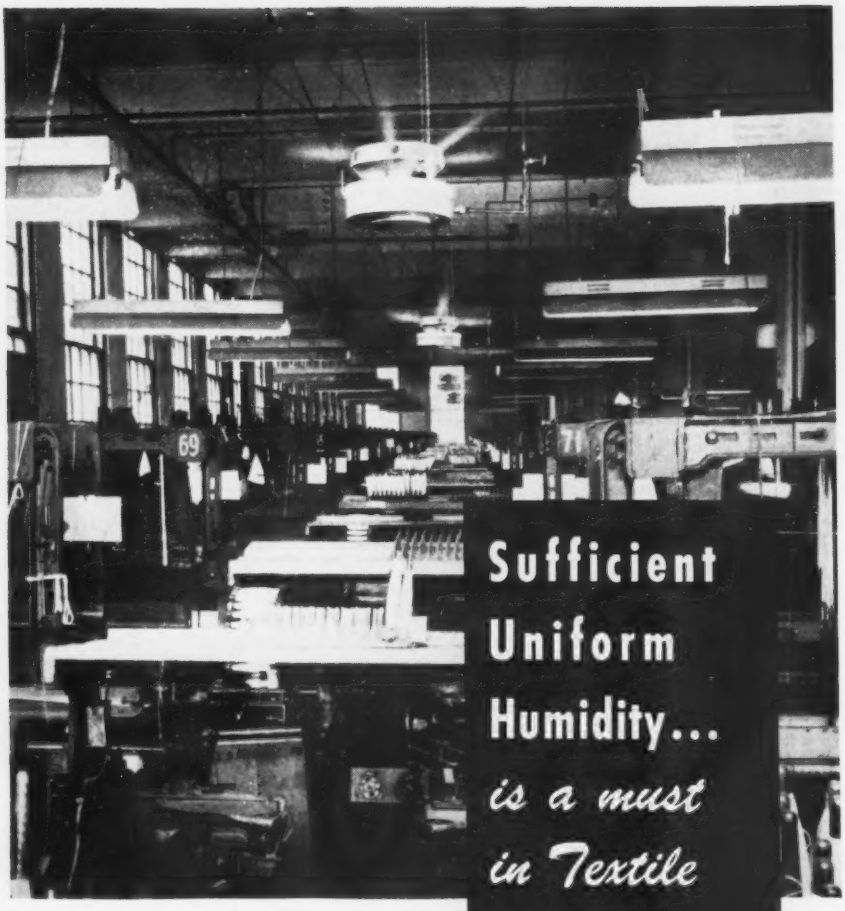

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water is known as "relaxation shrinkage."

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[1] The Protonized shrinkage-control process bears the registered trade-mark of Alrose Chemical Co., Cranston, R. I. Patents are pending on the process.

[2] The writer acknowledges the invaluable assistance of Leo Beer, Jonas Kamlet, and Mark Weisberg, who are responsible for the invention and development of the processes described in this paper. Many of the technical details have been worked out in the laboratory and plant by G. Hermann and H. Zimmerman. The assistance of Robert Joerger of Franklin Process Co. in carrying out the application of the Protonized process on the Franklin-Process machine is gratefully acknowledged.

Cotton Classing

(*Continued from page 111*)

Classer's length classification should include maximum length (length before blocking off), classified length (after blocking off), and his estimate of length uniformity. Snap judgment of fiber lengths should be avoided. The length information received from the laboratory should include the upper-half mean length (which closely corresponds to classified length), mean length, and the uniformity ratio. The latter is the ratio between the mean length and the upper-half mean length.

Comparisons of length uniformity may be made according to the table of ratios shown in Table I.

Fiber-strength estimates made by the classer may be stated as weak, fair, average, very good, and excellent. Laboratory tests for fiber strength whether made on Chandler or Pressley devices should be stated in pounds per square inch, and Table II may be used for comparison.

The skilled classer can detect degrees of fiber fineness. He may not be able to designate them in micrograms per inch of fiber length but he can define them as coarse, average, fine, and very fine. A suggested comparison with laboratory findings is shown in Table III. These comparisons will increase the classer's skill in evaluating fiber fineness.

Consideration will also be given by the classer to the cotton-quality factors affecting the appearance of the finished yarn. These will include neps and nature of impurities (leaf, pin trash, seed fragments, etc.). His description may be based upon the nep-count laboratory classification shown in Table IV.

It should be remembered that the condition of card wire, card settings, and rate of carding will all affect the

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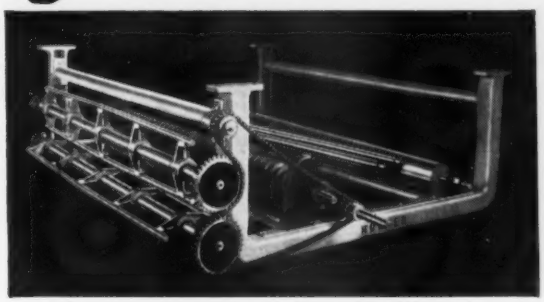

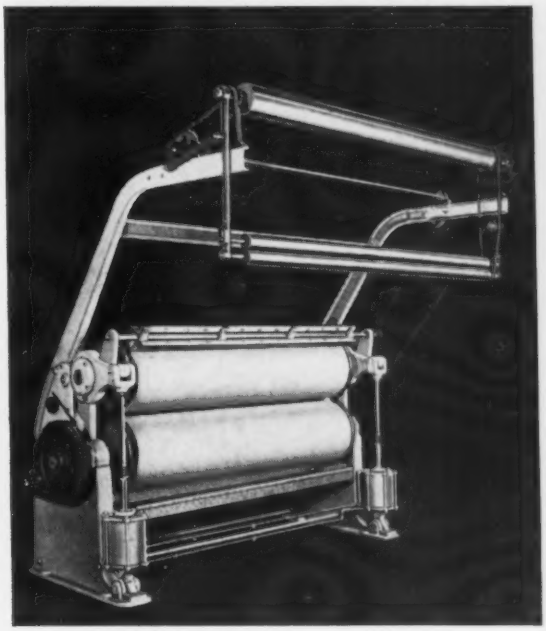

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The reasons for the success of this yarn carrier are as follows:

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3. Easier doffing at the spinning frame. Spindle tip suspension and tough but resilient construction of bobbins permit positive seating with finger tip pressure. Thus the bobbins come off easily.

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Like other A. P. T. Yarn Carriers, this tube is made of laminated paper impregnated for moisture resistance and hardened by baking. It is highly resistant to distortion, chipping and splitting, will not splinter and is free from static. Deep, well rounded corrugations permit free but controlled delivery.

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nep count of the card web; and that poor carding can greatly increase the number of neps originally in the cotton tested. Neps per grain is a very convenient factor to use when comparing neps in the cotton with the number in the picker lap, card sliver, or other product.

Inspection cards should be wound from the samples of finished yarn and compared with government standards for appearance. These cards should be sent to the classer for examination. Causes for yarn below established grade may be determined, and a decision made whether the raw stock or methods of processing are responsible for deficient quality.

Skein-strength data of all tests and the regular daily size and skein-break reports should be sent to classing room for classer to see that standard yarn strength is being maintained.

Full value from any fiber- or yarn-testing laboratory program cannot be obtained unless there is close cooperation between laboratory and classing department. The classer should select specimens for testing to make sure that they are truly representative of entire lot. The laboratory data of fiber values will greatly assist the classer in selecting bales for future mixes.

A comparatively few mills have established pilot plants for testing fiber under actual mill conditions. Samples of cotton are run through as far as the finished spun yarn. Tests can be made for waste on any or all processes and the actual quality of the yarn determined for appearance, strength, color, and uniformity. The data from these pilot plants are of great assistance to the classer, and all such data should be made available to him.

Throwing Plant

(*Continued from page* 131)

determinations, boiloff (of silk), denier and filament verifications, moisture content, residual shrinkage, strength and elongation tests, etc.

Development work on new processes is also coordinated in the laboratory. Experimental processes are followed and changed as necessary until an optimum procedure is determined and written into final process specifications.

CONING. The main coning room is air conditioned, fluorescent lighted, and utilizes large areas of glass block in the walls. It is kept neat in appearance, as the photograph of it shows.

The picture showing 15-denier monofilament nylon coning was taken in a different coning room, but one that is well lighted and well kept. A light application of Hamco 910 (Haas

No Guesswork about Protection...

No Easier Way to Cut Costs

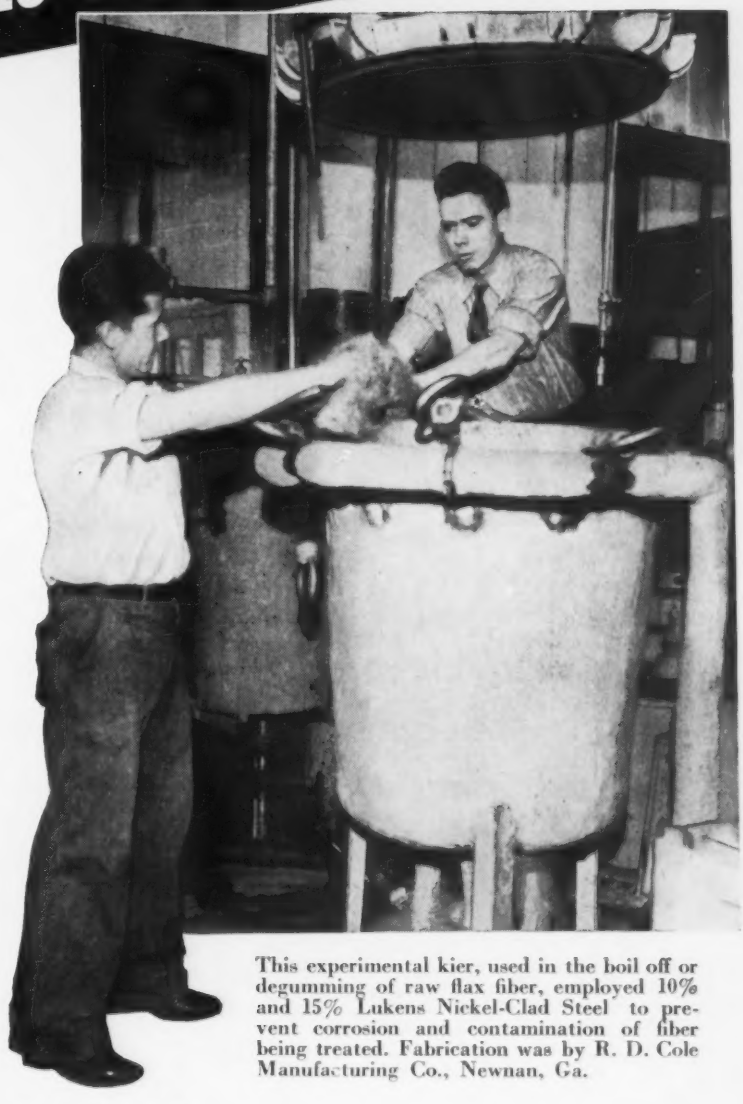
You can save as much as 50 per cent on material costs with Lukens Clad Steels—and still provide "solid" protection against corrosion and contamination. Positive control over the uniformity of cladding thickness gives you the *exact* protection your equipment and products require. There's *no guesswork* about it! And you can specify the cladding best suited for your problem . . . nickel, Inconel, Monel or any standard type of stainless.

Lukens precision method of cladding cuts costs in other ways, too. The bond between cladding metal and ASME quality steel backing is *permanent*. Commercial methods for bending, shearing, pressing or welding are employed.

For *extra* savings choose the widest plate you can use. Shortens fabrication time . . . cuts welding footage costs. Lukens Clad Steels are available in plates up to 178" wide, or from $\frac{3}{16}$" to over 3" thick.

Information on money-saving Lukens Stainless-Clad Steels is contained in Bulletin 338; on Nickel-Clad, Inconel-Clad and Monel-Clad Steels, in Bulletin 255. For your copies, write Lukens Steel Co., 406 Lukens Building, Coatesville, Penna.

CLAD METAL STEEL



This experimental kier, used in the boil off or degumming of raw flax fiber, employed 10% and 15% Lukens Nickel-Clad Steel to prevent corrosion and contamination of fiber being treated. Fabrication was by R. D. Cole Manufacturing Co., Newnan, Ga.

★ ★ ★

Be sure to see us at Booth Nos. 558-563 at the Chemical Show, New York City, December 1-6. Find out how you can get solid metal advantages with clad steel economy.

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DARNELL

CASTERS & E-Z ROLL WHEELS

Miller Corp.) is credited by the mill for much of its success in making superior cones of monofilament nylon (which, of course, is not thrown or sized). The yarn path when coning 15-denier nylon, or experimental quantities of 10-denier, is practically straight.

In addition to large quantities of hosiery yarn, the plants prepare yarn for lace, tricot fabrics, broadloom weaving, narrow fabrics, velvets, and braids. No wonder there are usually 45 to 50 lots in process at one time.

At Philadelphia, in addition to its narrow fabric looms the company has four broad looms and a sample tricot machine it uses for development work and to check the products of its Throwing Division.

Modernization Plans

(*Continued from page 109*)

The second and third floors are used for storage of wool. From the railroad receiving platform there are conveyors leading to the second and third floors. The building is also provided with a spiral chute to serve each floor, as well as a high-speed electric elevator. Robert & Co. is the architect and engineer.

Dublin Woolen Mill

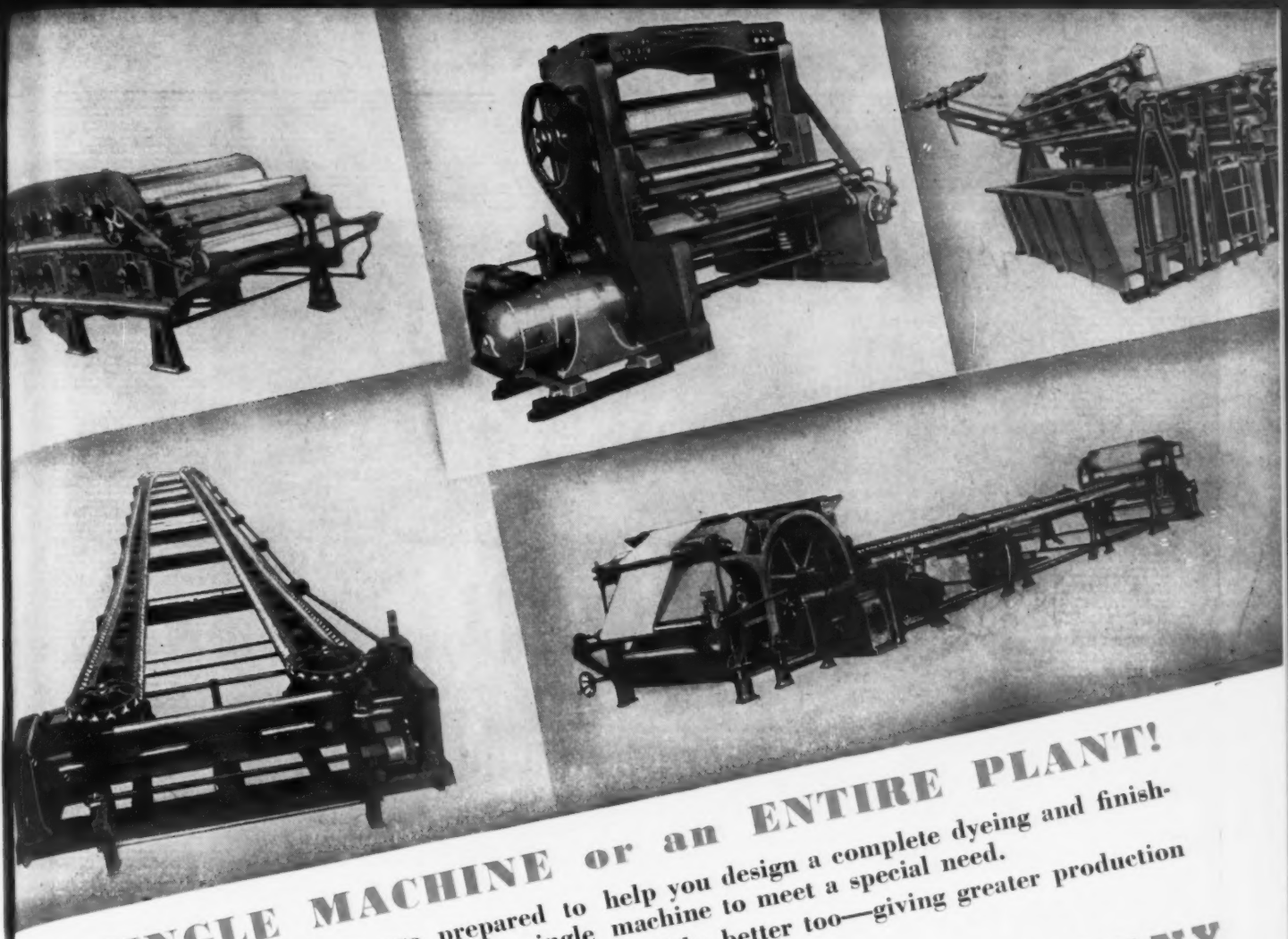
M. T. Stevens, division of J. P. Stevens & Co., is now completing a new totally enclosed modern building for a woolen plant at Dublin, Ga. The new plant will be known as Dublin Woolen Mill and will be equipped with new machinery. The building is a one-story steel frame with glazed-tile interior wall and brick exterior walls. C. M. Guest & Sons are general contractors. J. E. Sirrine Co. is the engineer.

Erlanger Mills

An addition to the mill and modernization of toilets is in progress at Erlanger Mills, Inc., Lexington, N. C. The work consists of a one-story addition to the weave room, with steel floor and roof beams, masonry walls, wood floor and roof decking, 2 in. of Celotex insulation on the roof, and a five-ply tar-and-gravel bonded roof. One complete new toilet tower, including shower rooms, is being constructed; and three present toilet towers are being completely modernized with tile floors, wainscots, and new fixtures. Completion date is scheduled for some time in December. Potter & Shackelford, Inc., is the contractor.

North Carolina Finishing Co.

A two-story addition to the sewing room and cloth storage room, additional loading platforms, and a penthouse for conveyor system are under construction at North Carolina Finishing Co., Salisbury, N. C. Standard mill construction is being



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Van Vlaanderen engineers are prepared to help you design a complete dyeing and finishing plant—or will help you select a single machine to meet a special need.

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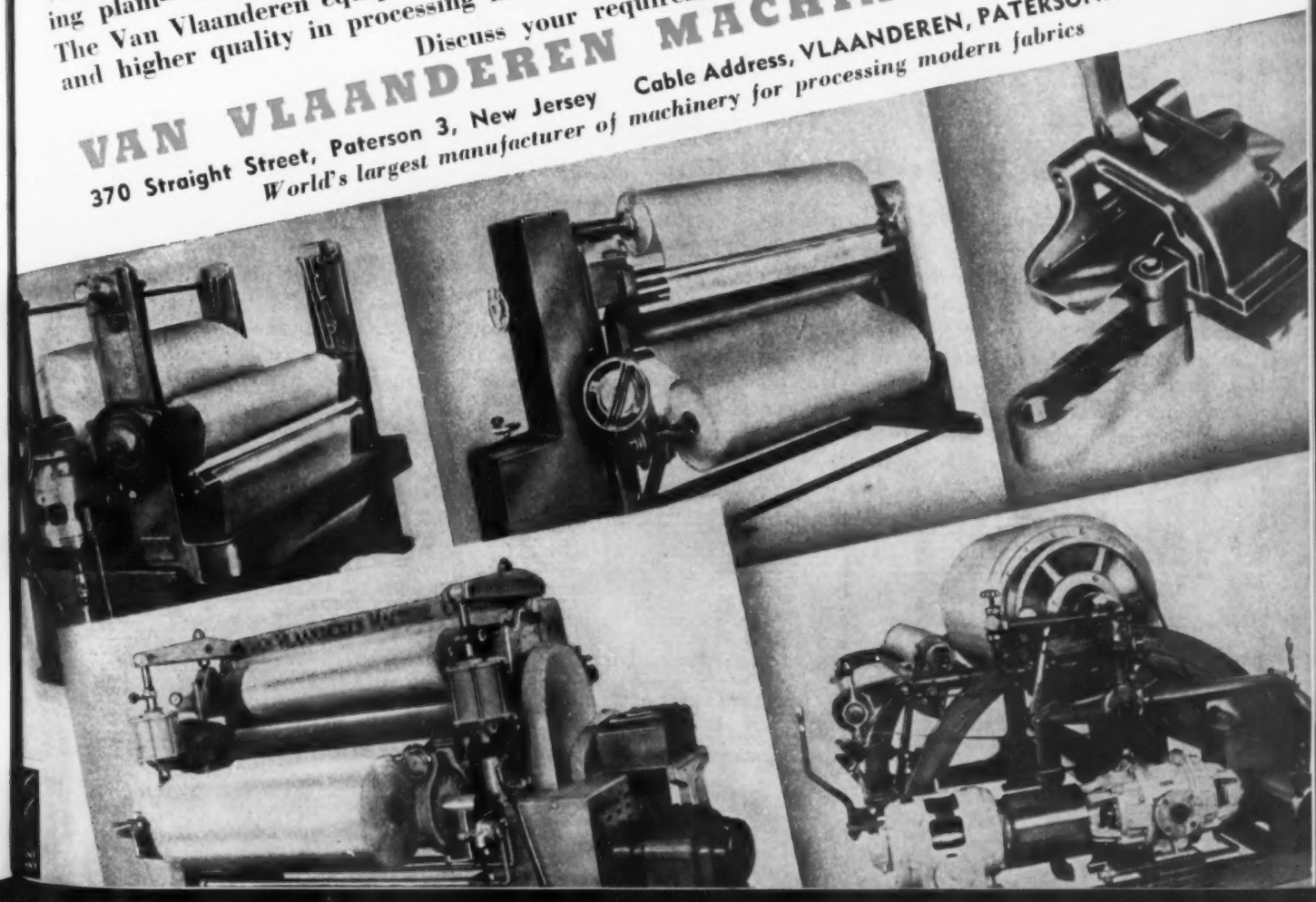

production goes up when humidity stays put

Yarns run smoother when relative humidity in the textile mill is held constantly at the proper level. There is less static to make them "wild," less chafing, and fewer ends down. That adds up to uninterrupted operation, increased production.

Close control of humidity is no problem at all with a Carrier Central Station Air Conditioning System. This scientific, year-round installation maintains any desired relative humidity *automatically*. It reduces temperature in summer, keeps it uniform in winter.

Mill operators especially like the low cost at which a central system can be maintained. Since the equipment is outside the mill proper, maintenance need not interfere with mill activities.

Carrier's name on air conditioning is a pledge of efficiency and dependability. In designing air conditioning, Carrier engineers draw on years of experience with textile mill problems. Their installations have stepped up output and improved quality for mills in many parts of the world. They're always glad to discuss your production difficulties. Carrier Corporation, Syracuse, New York.

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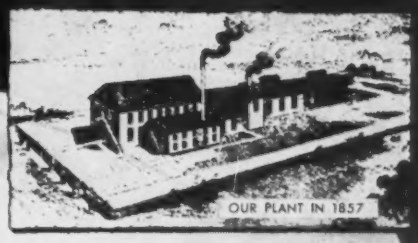

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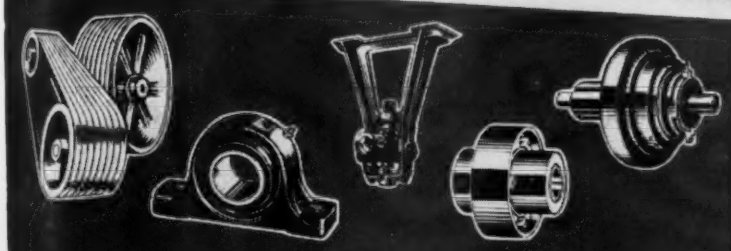

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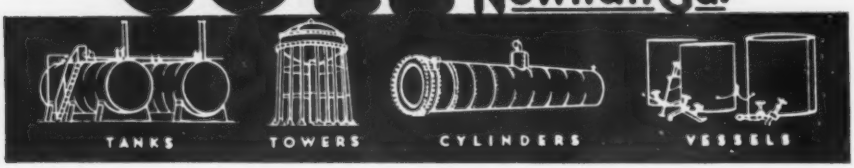


used, with masonry walls, steel floor beams and roof beams, wood floor decking with maple top, and wood roof decking with a five-ply tar and gravel roof. The first floor will be an addition to the sewing room, and the second floor an addition to the cloth storage room. The present sewing room is being revamped and the structural frame strengthened for use for cloth storage. An addition is also being constructed to the present mill office, consisting of seven additional offices, two conference rooms; and air conditioning for the office is being installed. This is the fifteenth addition which has been built on this plant since 1926. Starting with a small finishing building at that time, the plant has been developed into a modern dyeing and finishing plant for processing both cotton and rayon fabrics. The contractor engaged is Potter & Shackelford, Inc.

Utica & Mohawk Cotton Mills

Utica & Mohawk Cotton Mills, Seneca Div., Seneca, S. C., is completing a new extension; and carding and spinning machinery from Utica is now being installed. New wide-sheeting Draper looms will be installed soon. About half of mill will produce print cloths and the other half wide sheeting. New buildings of steel frame and heavy mill construction were erected by Daniel Construction Co. J. E. Sirrine Co. is the engineer.

Woodside Cotton Mills

Woodside Cotton Mills, Simpsonville Plant, Simpsonville, S. C., has a new extension under construction. One floor will be used for rayon opening and blending while another floor will be used for slashing. Air conditioning, including refrigeration, will be installed in the weave room. McKoy Helgerson, Greenville, S. C. is general contractor. The engineer is J. E. Sirrine Co.

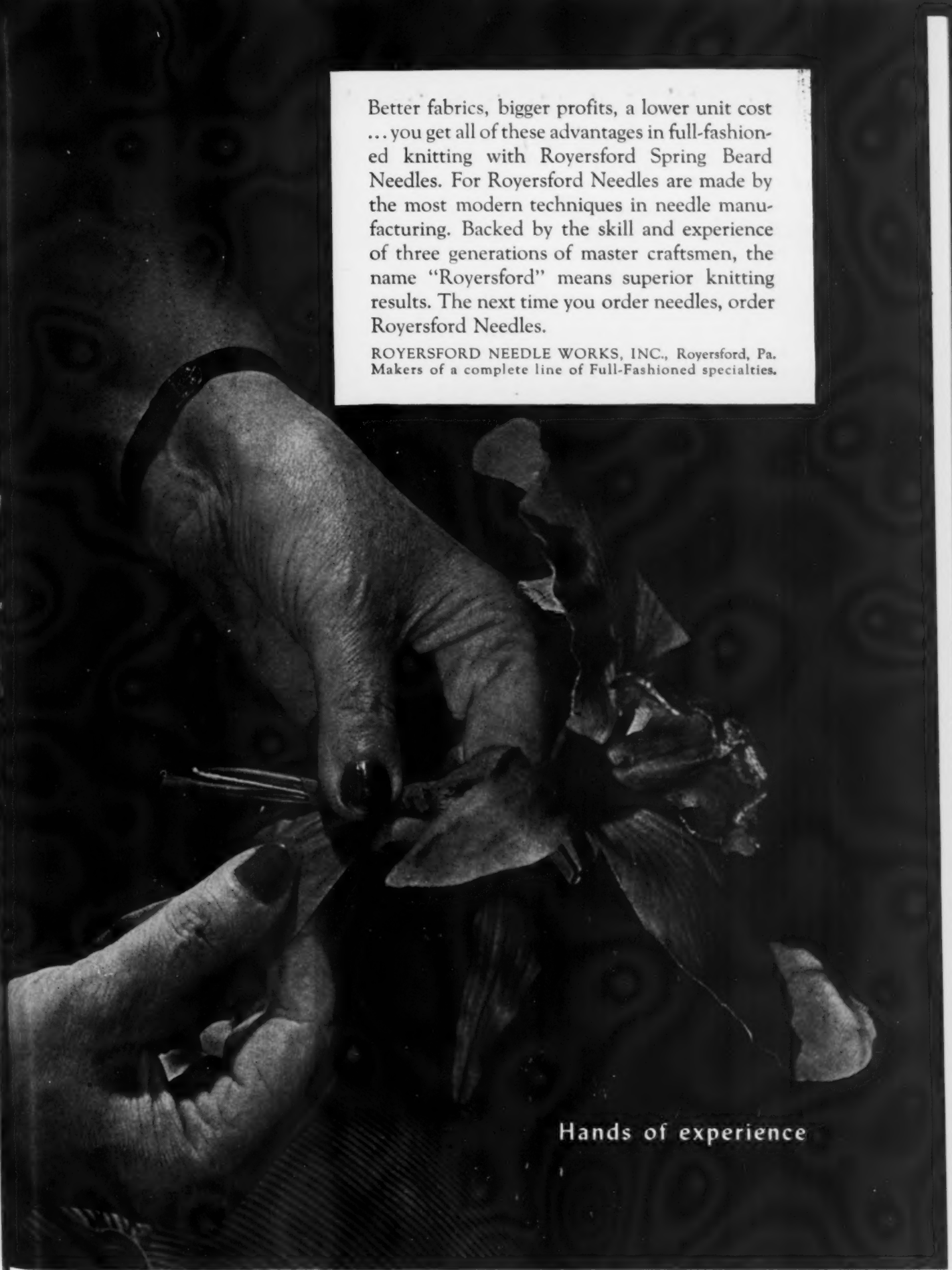
Woodside Cotton Mills, Greenville, S. C., has completed the construction work for a complete new opener room. Fiske-Carter Construction Co. of Greenville, S. C., completely rebuilt an old warehouse compartment and installed a mezzanine floor which will be used to open cotton which in turn will be fed to blending feeders on the floor below. New machinery will be furnished by Saco-Lowell Shops. J. E. Sirrine Co. is the engineer.

Dixie Cotton Mills

Dixie Cotton Mills, La Grange, Ga., are erecting additions of 31x220 ft., two stories, to the front of the mill; and 25x180 ft., two stories, to the back of the mill to give more room for new equipment. Brick walls, steel beams, and sash with wood floor and roof decking were used in the construction. Robert & Co. is the engineer.

Russell Manufacturing Co.

Russell Mfg. Co., Alexander City, Ala., has under way an extensive modernization program, a part of which includes extensions to the mill No. 2 to combine it



Better fabrics, bigger profits, a lower unit cost ... you get all of these advantages in full-fashioned knitting with Royersford Spring Beard Needles. For Royersford Needles are made by the most modern techniques in needle manufacturing. Backed by the skill and experience of three generations of master craftsmen, the name "Royersford" means superior knitting results. The next time you order needles, order Royersford Needles.

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Send for a copy of Bulletin No. 17-8 which describes the use of Metso Granular for boiling and scouring processes as well as other uses of PQ Silicates in textile processing.

metso® detergents

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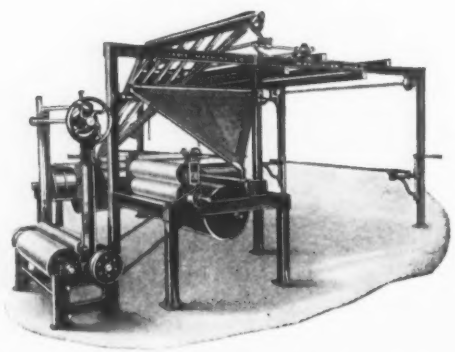

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Designed for use on wide sheetings to double the edges together twice. The goods are double doubled to one-quarter their original width, or four-ply. The machine is readily adjusted for different widths. After passing through the machine the double doubled goods may be folded for the market on our Cloth Folders or wound on boards on our Cloth Winders.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

with mill No. 5. The extensions consist of a 50x50-ft. addition to the opener room, a new picker room 55x80 ft., an extension to the card room 50x150 ft., and a one-story-and-basement extension to the spinning room 70x150 ft. The building operations at this mill include a new elevator, new toilet and dressing room facilities, new fluorescent lighting, and air conditioning. Production machinery will be modernized, and equipment for making high-quality knitting yarns for use by the company in its own knitting mills will be installed.

In mill No. 4 the machinery has been rearranged to provide straight-line production. New drawing and roving machinery, as well as fluorescent lighting and air-conditioning systems have been installed; and a complete new dye plant built for both package and raw-stock dyeing.

Other mill units of the company are also undergoing modernization and face-lifting programs. The company has under construction a new two-story office building 80x150 ft. of concrete-and-brick construction with limestone trim, which is to house all the executive offices, and an up-to-date testing laboratory. Engineer and architect is Robert & Co.

Anniston Manufacturing Co.

Anniston Mfg. Co., Anniston, Ala., is installing a new Babcock & Wilcox boiler and a new stack. The mill is also expanding the air-conditioning system in the weave room. A new elevator has been purchased from Monarch Elevator & Machine Co., Greensboro, N. C., and additional textile machinery is being installed in the preparatory departments. A new oil-storage house has just been completed by Daniel Construction Co. J. E. Sirrine Co. is the engineer.

Standard-Coosa-Thatcher Co.

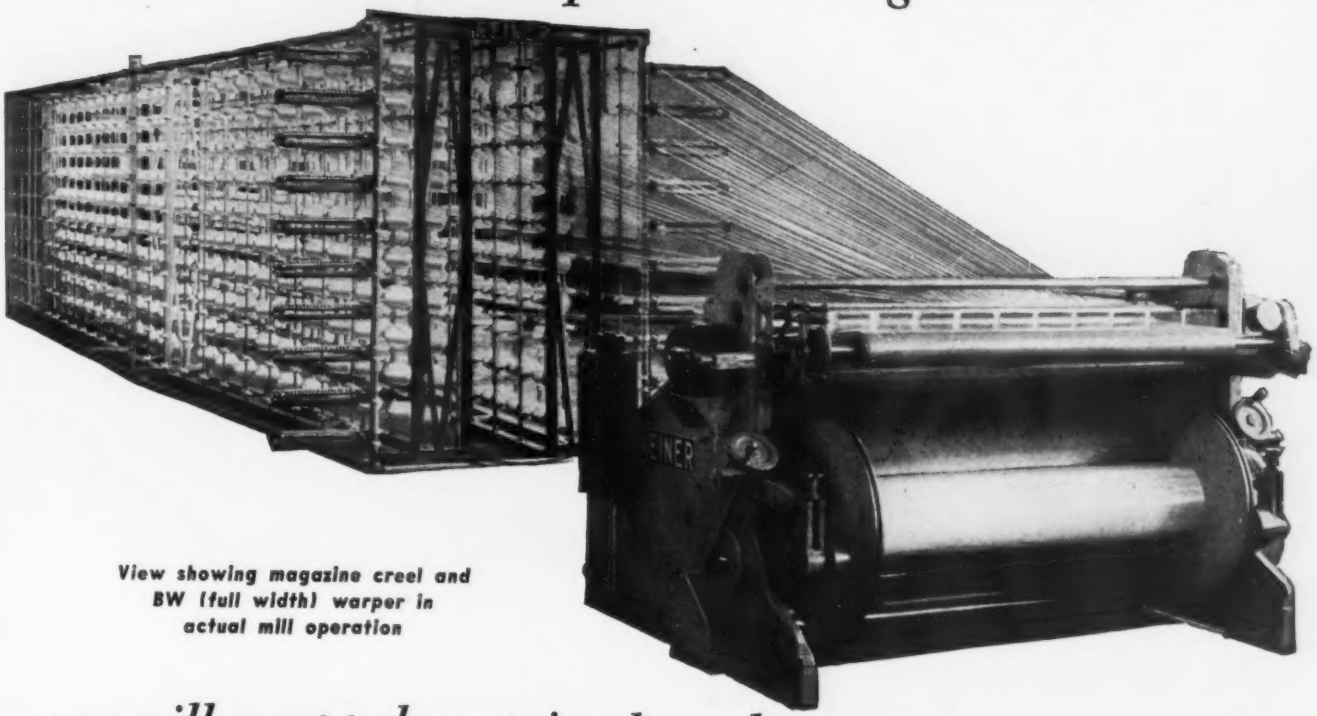
Standard-Coosa-Thatcher Co., Chattanooga, Tenn., has under construction an addition to mill No. 2, designed to carry three floors, with only two being built now. It is of reinforced-concrete flat-slab 133x116 ft., with steel sash, and wood flooring on the concrete slab. This addition is made to accommodate new twisters, mill offices, a conference room, and a control laboratory.

The plant at Gadsden, Ala., has completed an addition to its warper room, 50x100 ft., one and two stories. A Parks-Cramer central-station air-conditioning system is being installed in the spinning room, entailing construction of a new building to house the air-conditioning fans and equipment. Robert & Co. is the architect and engineer.

Hudson Worsted Co.

A new plant addition is under construction for Hudson Worsted Co., Hudson, Mass., makers of wool top. The building will be of steel-frame, brick-wall construction, and will have cement floors. It has four stories and will provide about 72,000 sq. ft. of floor space. Lockwood Greene Engineers, Inc., is the engineer.

When Production Depends on a Single Thread—



View showing magazine creel and BW (full width) warper in actual mill operation

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Reiner Creel features include the latest Reiner Mercury Stop Motion (not subject to corrosion or affected by lint) which acts instantaneously in case of yarn breakage thus cutting down stoppage to a minimum. Other Creel features are overhead delivery, all steel construction, cone stabilizers, disc or counterbalanced tensions, a break annunciator, and a movable tension gate for balloon control.

- Creel sections can be added on without disturbing existing units.
- We build creels for your special requirements or floor space.

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Speed and efficiency are stressed in the various types of sectional as well as full width warpers that take care of the multiple needs of the knitting, weaving and other textile trades.

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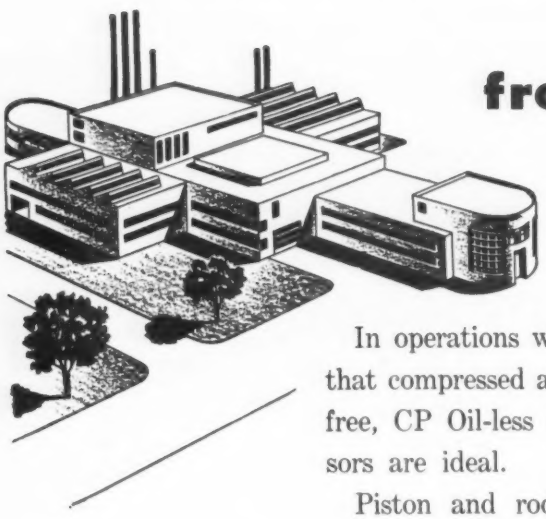

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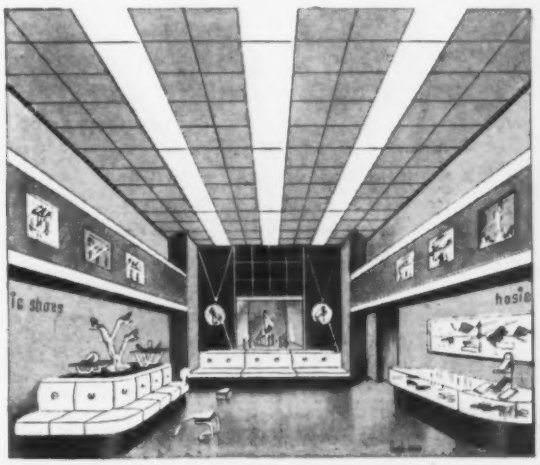

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Thousands of RunRite Plastic Sheaves have been running continuously, in many plants, for over six years, and still going perfectly. Under similar conditions they should do equally as well for you. Figure your savings in reduced down time alone. Then, bear in mind, that RunRites' smooth, perfectly balanced strap surface means longer life to harness straps. Once installed, they need no further attention for years of dependable service.

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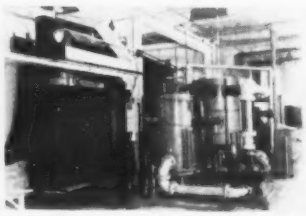
VERSATILITY IS A Leading Characteristic



Installation in a New England mill making women's wear woolens.

Installation in a Maryland mill making cassimeres, flannels, tweeds and shetlands.

Fabrics now being handled by this machine include woolens, worsteds, rayon mixtures and mohair plushes. Although it involves a considerable investment and volume production, many machines are now in use. Constant improvement in design, greatly decreased solvent consumption and tremendous operating economies account for its popularity.

ADVANTAGES

1. Removal of tar, paint, asphalt, creosote, pigment, chalk, etc.
2. Almost any type of wool oil can be used—even cheap mineral oils.
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9. Little or no soap required.
10. Big saving in hot water.
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12. Reduction in redyes and seconds.

RIGGS AND LOMBARD

FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

AATCC Contest

(*Continued from page 135*)

Studies in Soiling And Detergency

PIEDMONT SECTION

Contrary to the general trend of thought that increasing temperatures will yield greater soil removal, a study indicates that the reverse might be true. These findings show the necessity of evaluating a particular detergent at the temperature at which it is to be used in plant practice.

To date no instrument, method, or soil has been accepted as a standard for detergency evaluation. There has been much work on instrumentation and method. However, a minimum of effort has been expended in the consideration of a standard soil or soils. Therefore the prime purpose of this investigation was the development and study of a standard soil and its relationship to certain aspects of detergency evaluation.

Standard soils now in common usage all have some outstanding fault which in a majority of cases outweighs the virtues of any particular solution in approximately 50 soils studied. The one selected for further experimentation has the following composition: 2.0% Oildag, 0.25% Alkanol WXN, 8.0% 3F Fiber spray oil, 89.75% Stoddard solvent.

A study of the influence of length of wash on soil removal showed that under the conditions of this part of the investigation, equilibrium is reached in the vicinity of 30 min. as regards soil removal, whereas with the brightness increased and oil remaining, the peak seems to have been reached somewhere under 15 min.

It is suggested that the AATCC make available to its membership, as well as other interested parties, standard soiled fabric for the purpose of detergent evaluation.

Effect of Electrical Charge In the Application of Dyestuffs

RHODE ISLAND SECTION

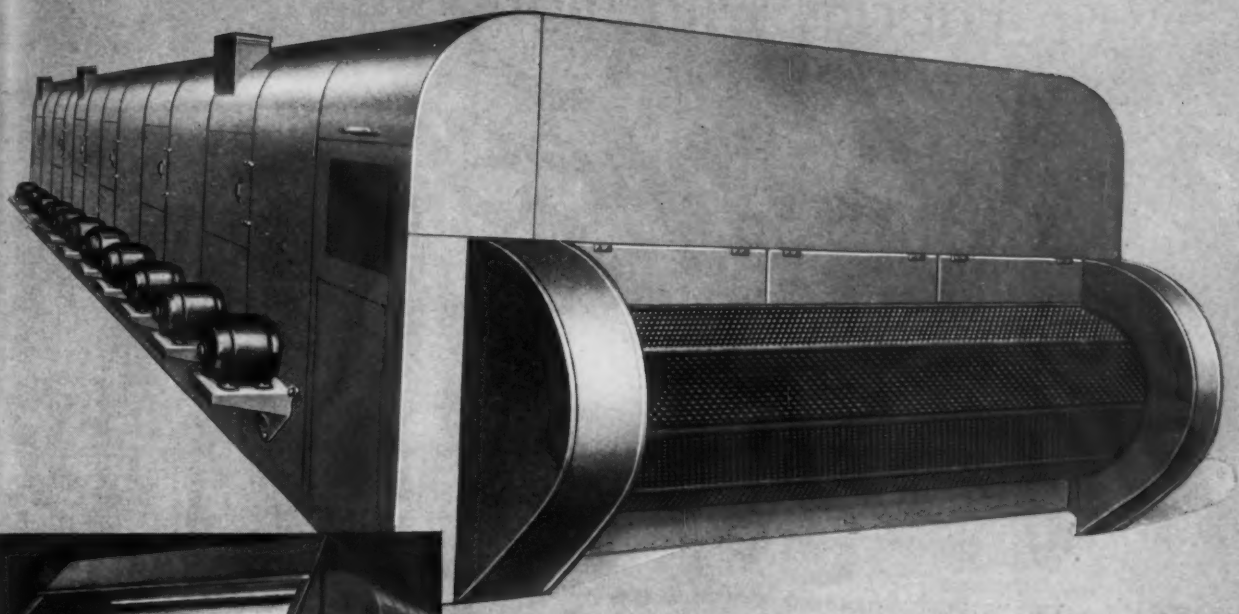
The chemical effects produced by an electric current were found to be most important effects observed in a study to determine whether the dyeing properties of soluble colors with a charged dye ion, or of vat pigment particles bearing an electrical charge, would be affected by applying electrical charge. It became evident that electrophoresis (faster migration of dye ions toward the fibers of opposite charge) played a very minor part, if any, in the effects produced. When electrical current did affect the dyeing properties, it was largely due to a change in pH caused by electrolysis of the dye bath in the vicinity of one of the electrodes. Furthermore, dispersing agents of the nonionic, anionic, and cationic types had a very material effect, particularly with vat color pigments.

Analysis of the results obtained support the following conclusions:

1. There is no evidence that the dyeing properties of any of the direct and acid colors studied were affected by any

SARGENT'S STOCK DRYER

MODERN—AUTOMATIC



The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

for Drying Wool, Cotton, Rayon, Other Synthetic Fibres, Rags

The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

Please write us for complete details.

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A.

Greater Dimensional Stability Assured in Fabrics with high content of *Lanese**

It is well recognized that Lanese . . . trademark for Celanese* synthetic staple fiber made from cellulose acetate . . . has the property of increasing the dimensional stability of a fabric in wet cleaning or washing. Under the varying conditions of humidity which experience shows are particularly detrimental to drapery fabrics this stability becomes exceptionally important. It is generally accepted in the textile industry that the greater percentage of Lanese in a fabric, the greater its dimensional stability.

POINTERS TO LANESE

Greater versatility of weaves.

Improved draping qualities.

Appreciably less waste . . . quality scientifically controlled.

Exceptionally stable price structure . . . eliminating need for hedging.

Greater dimensional stability.

*Celanese** *Lanese**

SYNTHETIC STAPLE FIBER

*Reg. U. S. Pat. Off.

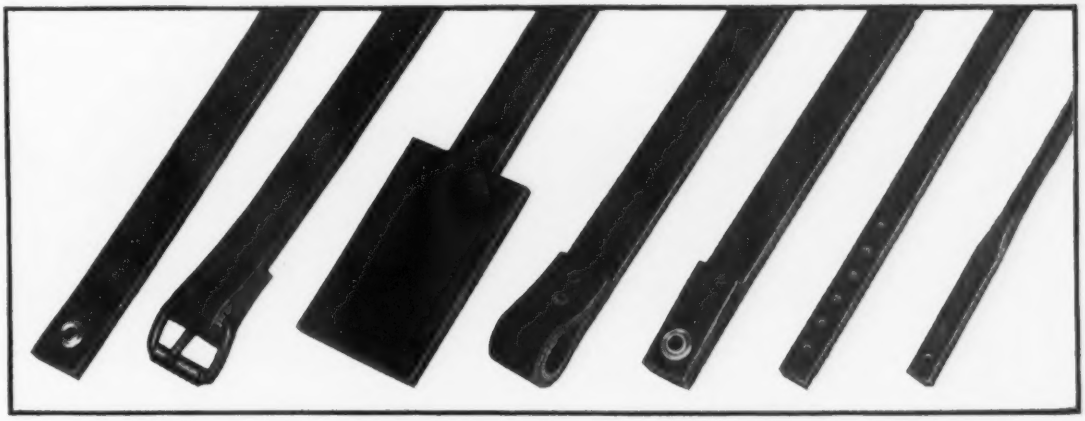
CELANESE CORPORATION OF AMERICA, 180 MADISON AVE., NEW YORK 16, N. Y.

Branch Offices: PHILADELPHIA 7, 12 South 12th Street • CHARLOTTE 2, 1106 Liberty Life Building • BOSTON 10, 140 Federal Street

JACOBS **ENGINEERED**

Super-Strength Rubberized Fabric Straps

Of pre-stretched square woven cord and vulcanized with Buna "N", Jacobs rubberized strapping insures longer life—less adjustment—higher standard of production. Jacobs rubberized strapping is pliable oil-resistant and of uniform strength and durability.



For Immediate Delivery — Any Width — Shape

JACOBS SUPER PICKER

Made according to gov't spec., this tape has the strength of two-selvages. Natural rubber combined with Buna "S" — double-wearing surface at point of shuttle strike.

E. H. JACOBS MFG. CO.

ESTABLISHED 1869

DANIELSON, CONN. CHARLOTTE, N. C.

For Efficient Textile Cutting

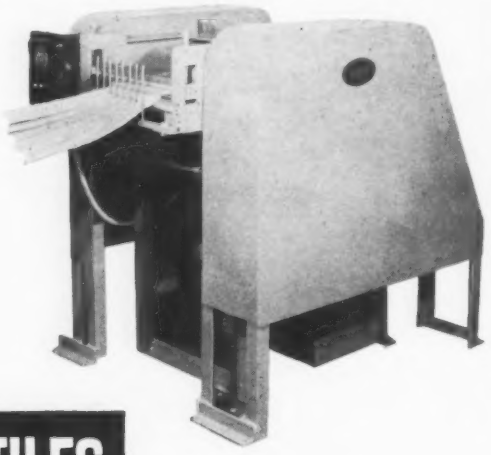
—Taylor-Stiles machines have been developed to meet actual production needs. Included are:—

1) Machines to cut continuous fibers into exact uniform lengths, as for rayon staple, wet or dry.

2) To cut rags (before garnetting) for shoddy.

3) To cut thread waste and other tangled fibers.

Illustrated
is a machine to cut continuous fibers into exact lengths. Discharge can be arranged to meet particular conditions.



TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

15 BRIDGE STREET
RIEGELSVILLE,
NEW JERSEY

Sterling Ring Travelers

IN A RUT?

The going may seem easier but the drag shows up in time. This is true of a Traveler running in a deep path cut into the ring, or to an individual who doesn't "snap out of it" and try to see his work from a different viewpoint.

TALK WITH A STERLING MAN

H. B. Cabaniss, Box 188	Monroe, N. C.
M. H. Cranford	Chester, S. C.
D. R. Ivester	Clarkesville, Ga.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

electrophoresis at the electrical potential applied in this work.

2. The dyeing properties of many direct and acid colors can be materially affected by local changes of pH of the dye bath, caused by electrolysis resulting from the application of electrical current.

3. In the range of potential and current studied, there is no evidence that the pick-up of vat color pigments is appreciably affected by the action of electrical current on the charged pigment particles.

Two additional conclusions can be drawn which might be the basis of extensive commercial development:

4. Some cationic dispersing agents materially increased the pick-up of vat pigment particles. It is possible, thereby, to obtain practically complete exhaustion.

5. By varying the pH of a dispersion of vat-color pigment, the pick-up can be controlled from a condition of practically no color pick-up, to one of practically complete exhaustion.

Materials Handling

(*Continued from page 125*)

controls the flow of water over the salt. This valve is set so that a brine level of about 22 in. is maintained throughout the brine house, insuring a constant supply of approximately 2100 gal. of brine.

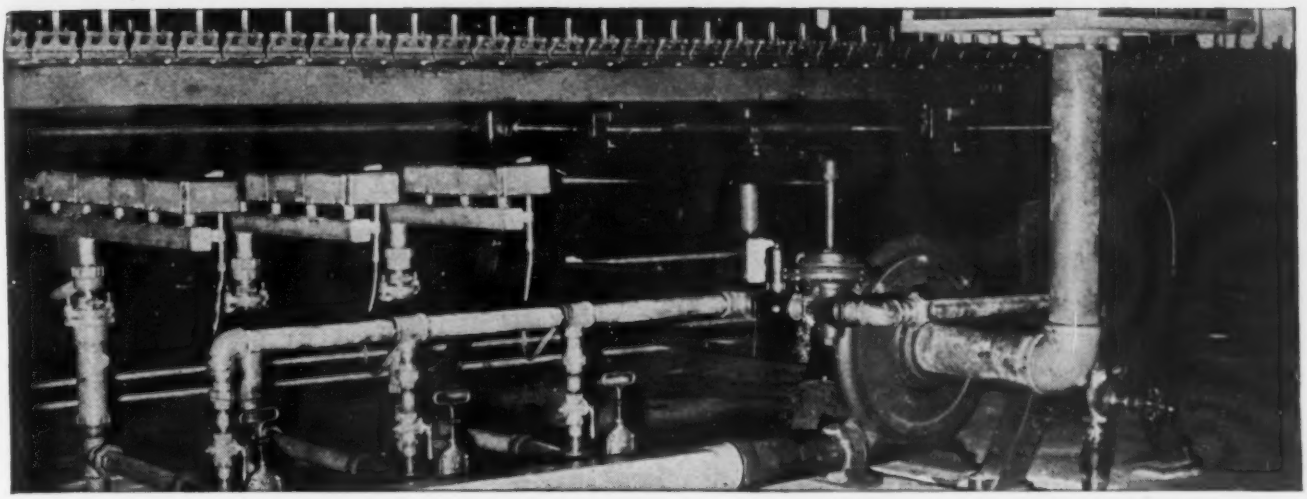
The only labor involved in using this brine-conversion system consists of that required to unload the railway car, turn the flow of brine to the processing machines on and off as needed, and flush the brine house between loads of salt.

A coal-silo system for storing, weighing, and feeding coal has also been installed at the Birmingham mill. The system, built by the Fairfield Engineering Co. and installed by Rust Engineering Co., is designed to furnish fuel to two boilers and maintain a three-week supply of coal.

The system consists of a hopper located beneath an elevated railway siding into which coal is dumped directly from the car. This hopper discharges coal onto a 28-ft. conveyor housed in a concrete pit, which feeds it to an 83-ft. bucket elevator. Both of these conveyors are driven by a single 7½-hp. motor. The bucket elevator dumps the coal into the silo.

The silo, supported by a steel framework, is 50 ft. high and 16 ft. in diameter and has a capacity of approximately 200 tons. It has a concrete roof and floor, and the walls are of reinforced tile construction.

The silo is equipped with an overflow chute to return excess coal to a ground pile. Coal is returned from this storage pile to the bucket elevator when it is needed in the silo. A limit switch automatically shuts off the elevator when coal in the silo reaches a pre-



Placed under the frame of open tenter the Gas-Fired Radiant Ceramic Burners expedite piece drying of rayons and acetates.

IMPROVE FABRICS
INCREASE PRODUCTION
WITH THE PRODUCTIVE FLAMES OF GAS

Producers and processors of every type of synthetic and natural fabric report similar successes in applying the productive radiance of GAS wherever heat is required in textile manufacturing.

Textile productioneering tools employing GAS for drying, singeing, sizing and other processes are credited with

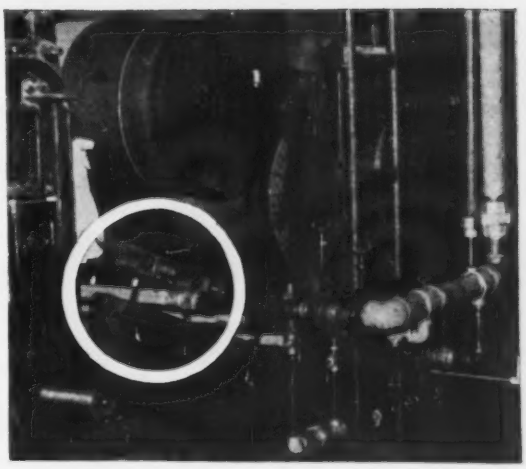
- **Improving loft of hand**
- **Eliminating print smudging**
- **Increases of 50% to 80% in drying speed**
- **Improving color fastness**
- **Increasing life of palmer blankets by more than 50%**

In each of these examples, and in hundreds of other substantiated cases, there's profit—proof of the advantages of GAS and modern Gas-Fired Textile Processing Equipment. You'll want complete details of manufacturing economies and production increases made possible by application of the productive radiance of GAS. Your local Gas Company Representative has accumulated this information for you.

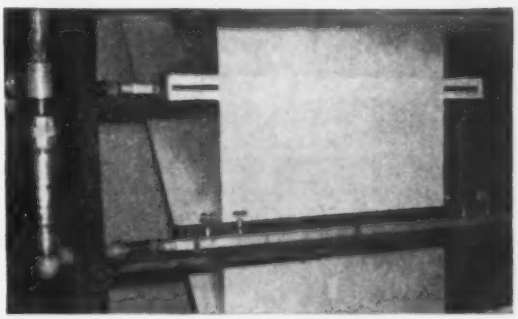
AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

Photos Courtesy of RED-RAY Manufacturing Co., Inc., New York City, Manufacturers of Gas-Fired Radiant Ceramic Burners.



Gas-Fired Radiant Ceramic Burners installed under cylinder of steam dryer to accelerate drying action.



Singeing of cotton cloth of various weights is readily possible with this simple arrangement of automatically controlled Gas-Fired Radiant Ceramic Burners.

Here You See...

The Kind of QUALITY CARD CLOTHING That Provides Full Efficiency Of Cards

QUALITY is what counts—and in BOOTH you have it. All Booth card clothing has a *firm* fabric or leather foundation yet is *fully flexible*, which reduces the possibility of shelling out. Booth is available with rehardened points. High-grade carders merit the best card clothing. Booth is that clothing.

Write us today for full information and prices on the many items in BOOTH'S COMPLETE LINE

It's Booth!

Benjamin Booth Company
Allegheny Ave. & Janney St., Philadelphia 34, Pa.

10,000,000 FEET OF HOLT MAPLE FLOORING!

Have gone into textile mills throughout the country since 1920 — with complete satisfaction to the mill operators.

When you think of floors, remember to specify Holt Flooring, made from Northern Wisconsin - Michigan Hard Maple.

HOLT HARDWOOD COMPANY
OCONTO, WISCONSIN

determined level. Coal from the silo is fed to the boiler-feed pulverizers through chutes and en route is weighed on Richardson automatic coal scales and recorded.

The system is said to unload and store coal at the rate of 20 tons an hour, to aid materially in yard cleanliness, and to permit the maintenance of an adequate supply of coal in spite of the lack of yard storage space. The mill estimates that the system will pay for itself in two years.

Slashing Practices

(*Continued from page 147*)

a wider range of speeds than could be obtained with cone pulleys, unless the pulley on the line shaft were changed.

"Another advantage is constant control of moisture in the warps. The stretch on this slasher is controlled by a Reeves variable-speed drive on the side shaft, with a micro adjustment. Stretch is maintained at 1.5%."

Mill No. 7: "We have a Westinghouse variable-speed drive with Brown moisture control and Brown steam control on a three-cylinder slasher. The advantages that we have found are: (a) an accurate moisture content maintained at all times, (b) an increase in the production of the slasher, and (c) easier starting and stopping of the slasher without kinking ends in the creel."

Mill No. 9 stated that it uses Link-Belt PIV Drive HM4, which develops 9 h.p. at a speed of 1,380 r.p.m. and 4½ h.p. at 345 r.p.m., with a ratio of 4 to 1. Advantages cited were a smoother start up, eliminating breakouts, and better control of speed to obtain maximum production and also to meet difficulties such as a loss of heat in a cylinder.

Mill No. 22 wrote: "Some advantages are better efficiency and more flexible production on ends and counts ranging from 2,000 ends of 12.25s yarn to 6,000 ends of 17s yarn. We use a Reeves variable-speed drive."

TWO TYPES. Mill No. 25: "We have two types of variable-speed drives on our slasher: (1) Westinghouse multimotor d.c. drive, and (2) Reeves transmission.

"The chief advantages are:

1. Better tension control.
2. Control of moisture content of yarn, if the drive is connected with moisture-control units.
3. Less mechanical trouble."

Information given at the meeting included:

Pepperell Mfg. Co., Lindale Div., Lindale, Ga.: We have one slasher equipped with multimotor drives that has been in operation 1 yr. One motor

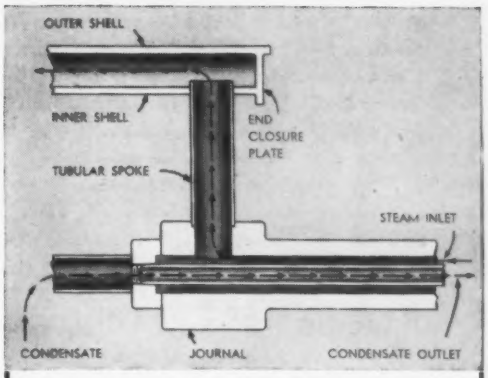
for increased output...reduced costs with

Lukenweld Jacketed Drier Rolls

Increased production at lower cost follows when Lukenweld Jacketed Drier Rolls replace drum-type rolls. Here are 15 reasons why:

1. Welded, double-shell steel plate construction speeds up heat flow, greatly improves heat transfer properties.
2. High strength of rolled steel plate permits safe operation at pressures of 350 psi and higher.
3. Greater steam velocity assures greater steam turbulence in the roll.
4. Steam velocity minimizes possibility of dead steam in the roll.
5. More uniform temperature across the face of the roll.
6. Condensate-removal pipe revolves with roll, gives quick, positive condensate removal.
7. Mechanically safe . . . will not explode.
8. Roll stays round . . . is more dimensionally stable.
9. Smaller bearings may be used . . . lowers power cost.
10. Steel plate construction reduces weight, saves on operating costs.
11. Can be made in a wide range of designs.
12. Sizes from 2 feet to over 18 feet in diameter.
13. Can be designed without bolts, nuts, or siphons to work loose in service.
14. Can be used in the high temperature range that employs high boiling point, heat transfer liquids.
15. Steel plate outer shell provides the soundness required for any type of machine finish.

Bulletin 358 tells the story of Lukenweld Jacketed Drier Rolls . . . shows specific instances where drying rate has been stepped up as much as 50 per cent. Write today for your copy. Lukenweld, division of Lukens Steel Company, 406 Lukens Building, Coatesville, Pa.



Section of a typical Lukenweld Jacketed Drier Roll showing how steam is guided in restricted area between inner and outer shells, providing greater steam velocity and improving heat transfer properties.

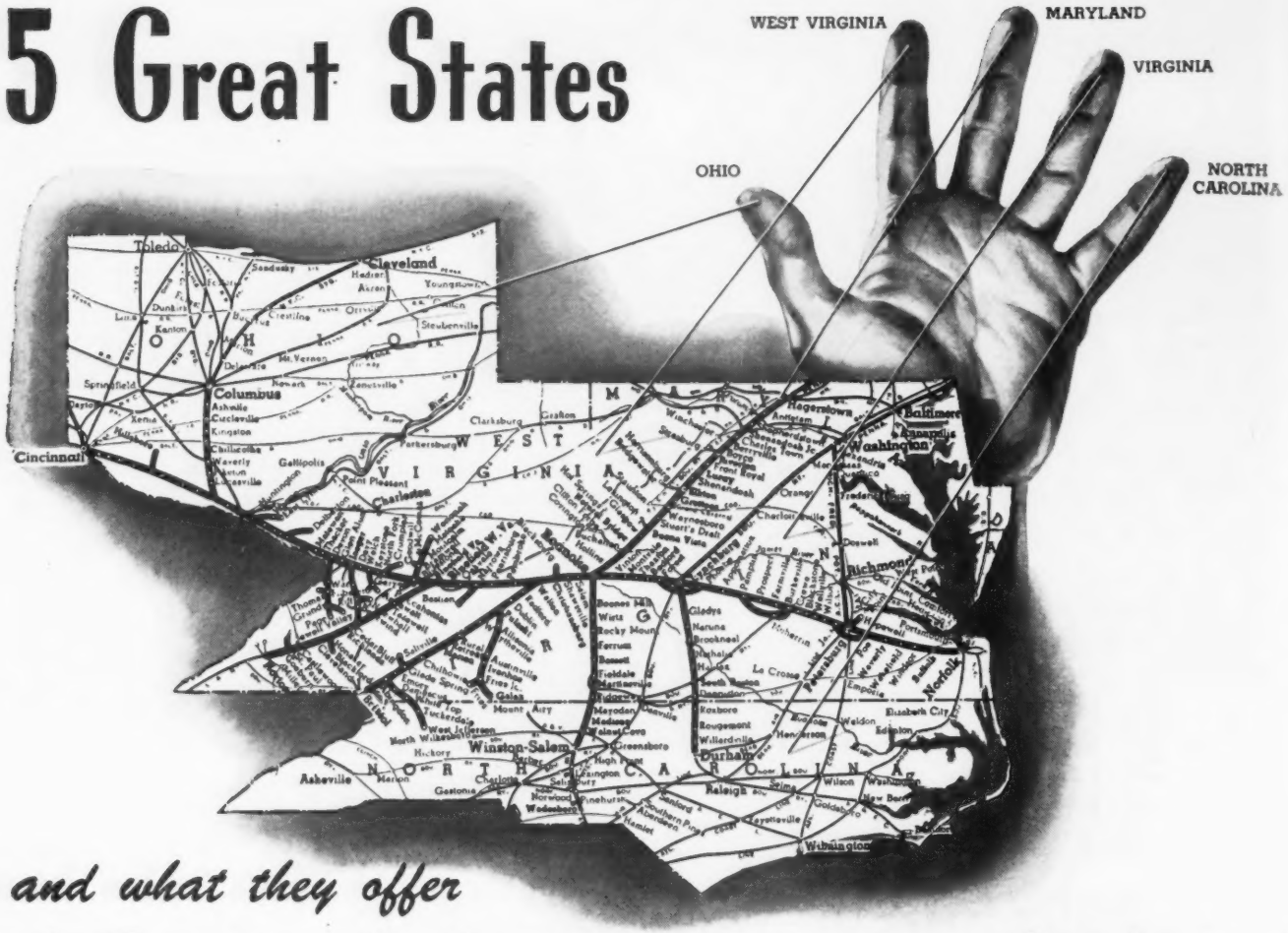
Sizes from 2 feet to 18 feet O. D. and over

LUKENS
LUKENWELD DIVISION

LUKENWELD

DRIER ROLLS AND DRYING MACHINERY

5 Great States



and what they offer

the Executive who plans to locate or relocate his plant . . .

The five states which comprise Norfolk and Western territory — Ohio, West Virginia, Virginia, North Carolina and Maryland — make up one of the fastest-growing industrial sections in the nation. Here industry finds those elements necessary for successful manufacture . . . a varied abundance of raw materials . . . plenty of power and pure water . . . intelligent and industrious native labor . . . cooperative state and local government . . . an almost unlimited supply of superior, all-purpose bituminous coal, mined within short distance hauls, and the Norfolk and Western's famed *Precision Transportation* bringing "next door" the markets of the nation and, through the Port of Norfolk, the markets of the world. For quick, confidential information about any section of Norfolk and Western territory, communicate with the Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke, Virginia.

OHIO — producer of limestone • clay • brines rich in sodium, chlorine, potassium, bromine • quartz • sandstone • shales • sand and gravel • farm and dairy products • thousands of manufactured items.

WEST VIRGINIA — mineral storehouse of coal • natural gas • cement material • clay • hematite • limestone (building and agricultural) • ocher • shale • salt • sandstone • siderite • timber.

MARYLAND — land of farm and dairy products • oyster, crab and shad fisheries • coal, clay, sand, gravel, limestone and cement materials.

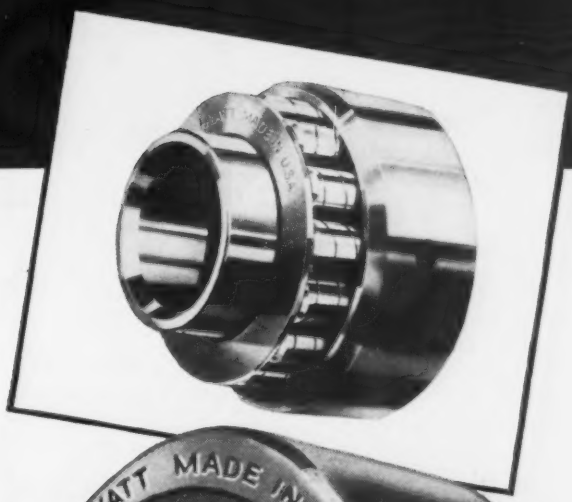
VIRGINIA — producer of asbestos • bauxite • building and construction stone • cement materials • clays • coal • concrete aggregate • cotton • diatomite • farm and dairy products • feldspar • silica • orchard products • gravel • greenstone • gypsum • iron • kaolin • kyanite • lead and zinc • limestone • manganese • marble • marl • mica • mineral waters • peanut products • phosphate minerals • quartz • salt • ocher • sand and sandstone • shale • pyrrhotite • titanium minerals • unakite • timber • tobacco.

NORTH CAROLINA — building and construction stone • copper • cotton • iron ore • manganese • mica • shales and clays • tobacco • soapstone.

Norfolk and Western Railway

FOR BETTER PLANT LOCATIONS

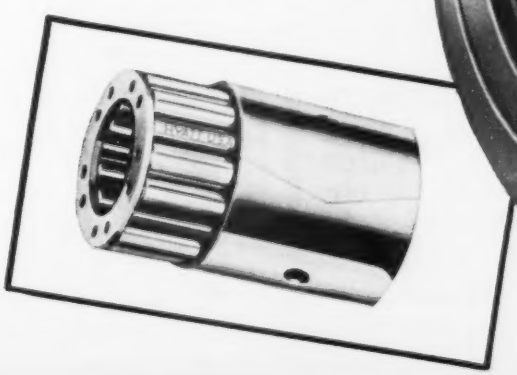
PRE-DETERMINED QUALITY That Pays Off



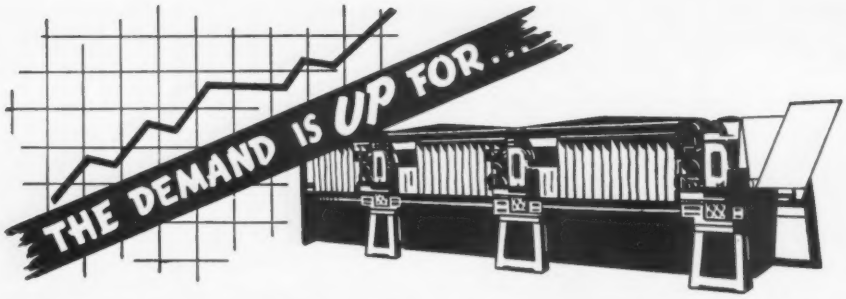
When it comes to roller bearings—most engineers and designers come to Hyatt for the right type and size—for an endless variety of applications.

These experts—for more than five decades—have designed in and specified Hyatt Roller Bearings for various sound and practical reasons. And over the years, Hyatts have given proof by performance that these men have chosen, and continue to choose, wisely.

Not only the correctness of design but the pre-determined quality of Hyatt Roller Bearings pays off to the manufacturer and the ultimate user of a Hyatt-equipped machine. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



HYATT ROLLER BEARINGS



DRUMMOND Soap and Flakes

EASY TO USE - SUDS BETTER

Demand of the textile industry is up for Drummond Soap Flakes! And no wonder. These easy to use and quick sudsing flakes possess the same formula features of Drummond Soap—well known in the industry for years.

Now you have your choice, Drummond Soap Flakes — or Solid Drummond Soap!

Both have the advantages of high body and low alkali content — advantages that leave fabrics clean with a downier feel, brighter colors, and whiter whites. Try a sample and note the difference.

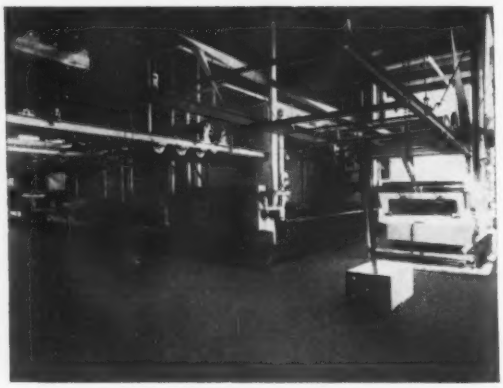
Write today for your FREE working sample of Drummond Soap — just ask for Flakes or Solid.

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

NEBUTTCO AGERS NEBUTTCO



We Are Proud of This Installation

The NEW ENGLAND BUTT VAT AGER and its strikingly modern features are outstanding in the units illustrated above. Of the machines shown, three were furnished new by us, and two were rebuilt using our new roll ball bearing housings and drives with our entering chambers.

Space does not permit a detailed description. Why not write us for complete data? We feel sure that the details concerning the NEW ENGLAND BUTT VAT AGER will interest you.

NEW ENGLAND BUTT COMPANY

PROVIDENCE 7, R. I.

drives the take-up beam, and another drives the size-box squeeze rolls. As yarn builds up on the beam, tension on the running yarn is controlled through a control box by varying the speed of the motor. Better control of tension is obtained. However, the same results could be obtained with a regular drive if sufficient and proper attention is paid to the control of tension.

Improved moisture control, as a result of tying the drive in with a moisture-control element, has also been obtained. We have no mechanical trouble with the installation. The old-type clutch, always a trouble spot, has been eliminated.

Waste at the slasher has remained practically the same. The slasher is some easier to start up, which may have some effect on the amount of waste.

MICRO ADJUSTMENT. Exposition Cotton Mills, Co., Atlanta, Ga.: We use a Reeves drive with a micro adjustment, in conjunction with a Brown Moist-O-Graph. Moisture content of the warps is maintained at 8½%. Another advantage is the wider range of speeds possible for running different styles of warps. We also get better starting and stopping of the slasher, better uniformity and weaving quality of the warps, and more uniform tension on the yarn during slashing. Tension is changed by an automatic control in the Moist-O-Graph changing the speed of the driving motors.

Columbus Mfg. Co., Columbus, Ga.: We have a Westinghouse variable-speed drive, a Brown Moist-O-Graph, and a Brown steam control. We get better moisture control and better production because of better starting and stopping of the slasher.

Swift Mfg. Co., Columbus, Ga.: We have a Westinghouse multimotor drive and a free-wheeling-clutch Reeves drive. We have less trouble in starting the slashers and better tension control.

Bibb Mfg. Co., Columbus, Ga.: We use the Reeves drive. About the only advantage is better moisture control, which permits maximum production at any given set of conditions.

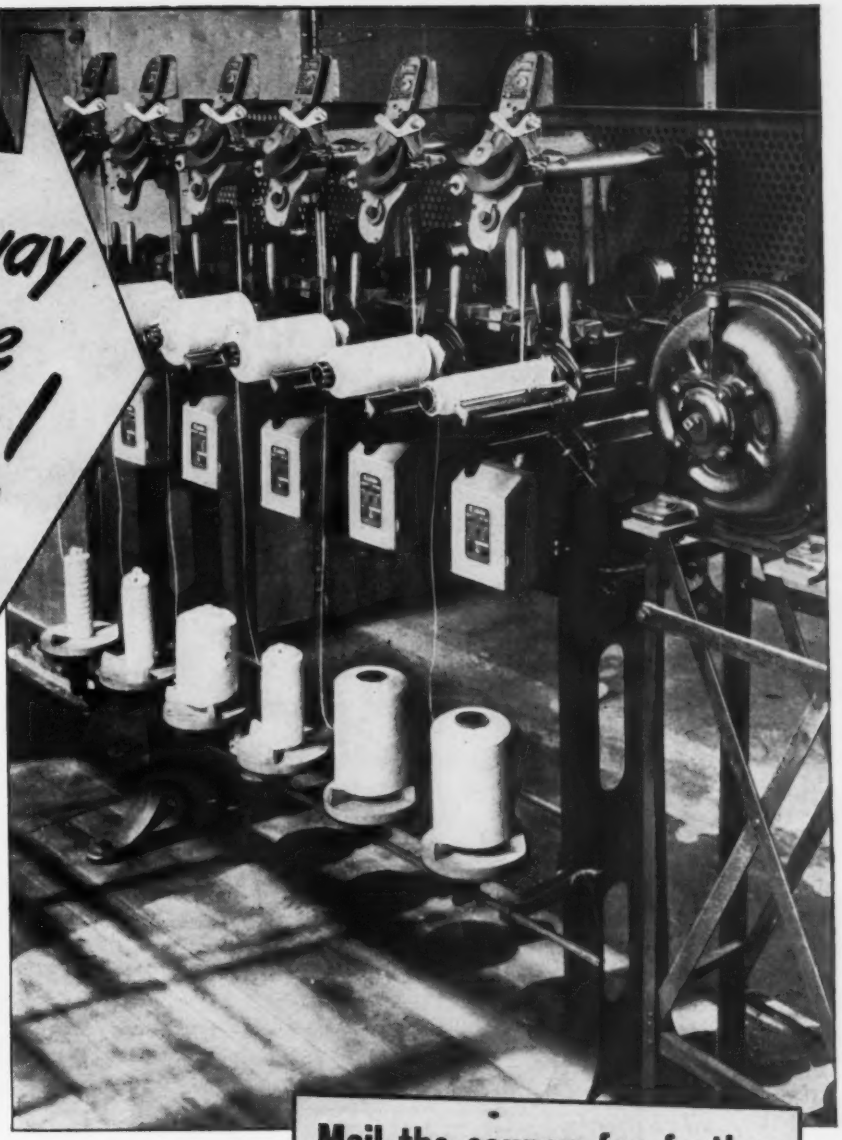
United Rayon Mill: We have tried Reeves variable-speed drives on rayon on five-roll slashers and find them satisfactory.

Question No. 3. *What percent stretch is recommended and what percent will warps stand before giving trouble in weaving?*

Data from the written answers to this question from 20 mills are tabulated in Table 1. (See page 145.)

Mill No. 25 wrote: "Our experience has shown that the more stretch left in the yarn the better the weaving qualities. We try to keep our warp

Here's the way to wind dye packages!



1. UNIFORM THROUGHOUT EACH PACKAGE

2. UNIFORM FROM PACKAGE TO PACKAGE

For uniform colors on package dyed yarns, equip your Universal 50's with the *Kidde* Tension and Density Control!

With *Kidde* Control, you can wind your dye packages at the uniform low tension and density that assure successful dyeing — uniform *throughout each package*, uniform *from package to package*. You'll particularly want *Kidde* Control if you're package dyeing acetate rayon, nylon, synthetic filament yarns.

In addition, the *Kidde* Tension and Density Control eliminates shiners and decreases breakage on rewind from dye package to cone.

Get the facts!

Mail the coupon for further information on winding dye packages with the

Kidde

Tension and Density Control

Walter Kidde & Company, Inc.
1191 Main Street, Belleville 9, N. J.

Gentlemen:

Please send me information on the *Kidde* Tension and Density Control for winding dye packages.

Name.....

Position.....

Company.....

Street Address.....

City.....Zone No. ...State.....

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Walter Kidde & Company, Inc. 1191 **Main St., Belleville 9, N. J.**

BRINGING PROBLEMS TO LIGHT

The eyes of Corn Products technicians, at our textile laboratory in Greenville, S. C., see many textile problems. Their experience and knowledge, backed by complete facilities, answer these problems to the profitable satisfaction of many textile manufacturers.

CORN PRODUCTS SALES COMPANY

Greenville, S. C. • Greensboro, N. C.
Spartanburg, S. C. • Birmingham, Ala.
Atlanta, Ga.

● BUILT BY AMERICAN MACHINE & METALS, INC.

The Right Bearings

For Atlas Extractors!

Both the 40″ Extractor turning at 850 r.p.m. and the 48″ Extractor operating at 750 r.p.m. rotate on SKF-equipped spindles. SKF Bearings have adequate capacity to take the high unbalanced loads. They need no adjustments and only infrequent lubrication. All these advantages—and many more—are *yours* when you use SKF Bearings.

6311

SKF INDUSTRIES, INC.
Front St. & Erie Ave., Philadelphia 32, Pa.

McBRIDE
CREELS FOR EVERY PURPOSE

"TYPE RM" MAGAZINE CREEL
All Welded Steel Construction
Indestructible Double Light Indicator
Simplified Fool-Proof Electronic Stop Motion
Exclusive Self-Locating Swinging Spindle Arms(Pat. Applied For).
Each Creel Is Made in Sections Completely Assembled in Our Shops,
So There Is a Minimum Amount of Labor Required for Installation.

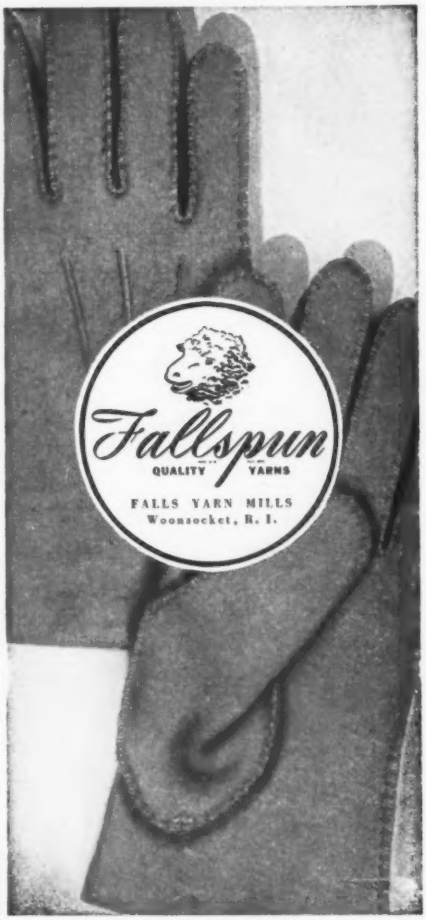
EDWARD J. McBRIDE
Adams Avenue and Leiper Street — Philadelphia, Pennsylvania — Phone Jefferson 5-8622

Wayne Traverse Wheels for use on your Universal No. 90 winders, made of *oil hardened tool steel* cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

Ask for sample and prices.

WAYNE MFG. CO.
HONESDALE, PA.



down to 1.5% stretch. It is difficult to go consistently lower than this and keep good-running work at the slasher.

"The following loom-stop test was conducted under controlled conditions to verify the 1.5% stretch figure:

Stops per loom hr.	1% stretch	3% stretch
Attributed to slashing....	0.101	0.173
Total warp stops.....	0.344	0.404.

Discussion at the meeting disclosed the following information:

Fairfax Mill, West Point Mfg. Co., Fairfax, Ala.: We prefer 1.5% stretch. From 2.5% up will cause trouble in weaving. Our warps range from 224 ends to 1,500 ends. Our slashing speed is from 30 to 70 yd. per min. We add from 3 to 12.5% starch.

Exposition Cotton Mills Co., Atlanta, Ga.: We determine stretch with yardage counters, placing one on a section beam and one on the front beam. We stop the slasher, drop the counters against the yarn, start the slasher, run 500 yd. of warp, stop the slasher, and check the two counters. We run 1.5% stretch, add 12.5% starch, and leave 7.5% moisture.

Frequent checks, sometimes as often as once every 4 hr., are necessary to maintain proper stretch. The amount of moisture is somewhat controlled by stretch. If the yarn is pulled tight around the cylinder, the yarn dries out more. If it is slack around the cylinder, more moisture is left in the yarn.

Care must be observed in selecting the yardage counters to be used. Counters do not register the same. We had to try several before we found two that registered exactly the same. To check the registering, we held two counters down on the same beam and checked them against each other.

Chicopee Mfg. Corp. of Ga., Gainesville, Ga.: We get about 1.5 to 2.0% stretch in our warps. Warps range from 486 ends of 40s to 3,400 ends of 30s. We leave about 6 to 8% moisture in the warps and add from 3 to 12% size. Stretch is controlled by the amount of cloth on the delivery roll.

Swift Mfg. Co., Columbus, Ga.: We find that about 2% stretch is satisfactory. We slash 8s yarn at about 60 yd. per min., adding 10% size and leaving 8% moisture. We measure stretch by using yardage counters on the front and back beams.

Bibb Mfg. Co., Columbus, Ga.: We get from 1 to 1½% stretch in 13s to 24s yarn ranging from 1,900 to 6,000 ends per warp. Slasher speed ranges from 40 to 60 yd. per min. Yardage counters are used to determine stretch weekly. In addition to this routine check, we also test for stretch as the need arises.

Question from the floor: *Why was 1½% stretch settled on as best? Is*

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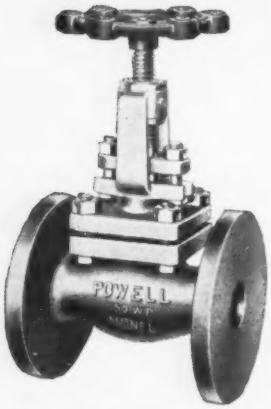

Fig. 1979 S. S.—150-pound Stainless Steel Globe Valve. Flanged ends, bolted flanged yoke bonnet and outside screw stem.

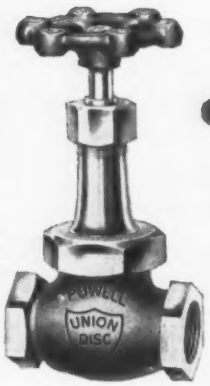

Fig. 150—150-pound Bronze Globe Valve with screwed ends, union bonnet and renewable composition disc.

Fig. 1793—Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", inclusive. Has outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

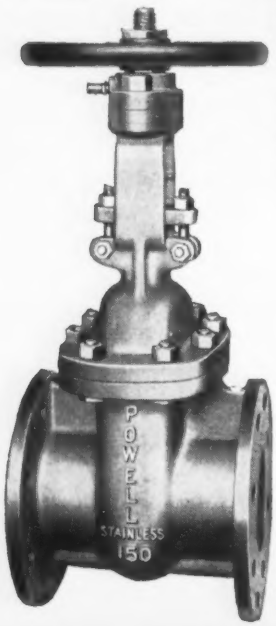

Fig. 2453-G—New, standard 150-pound Stainless Steel Gate Valve with outside screw rising stem, bolted flanged yoke-bonnet and taper wedge solid disc.

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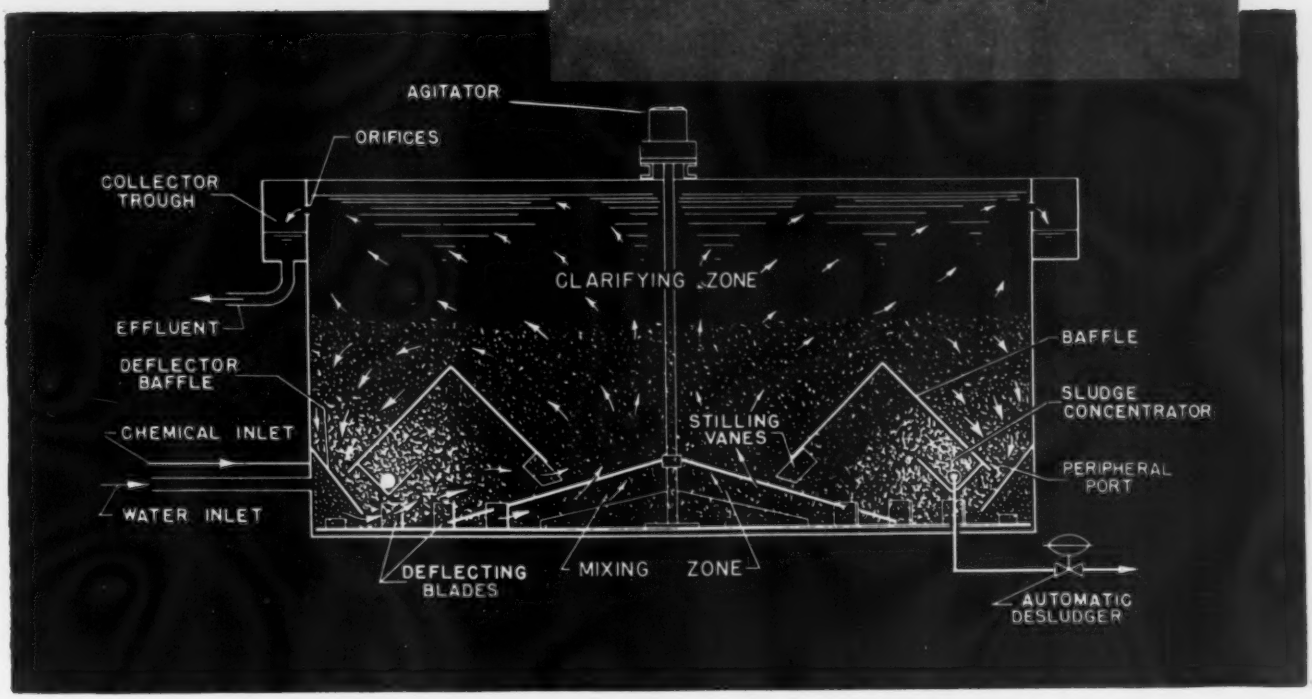

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there any relation between stretch and end breakage?

J. C. Edwards, Jr., Exposition Cotton Mills Co.: Ends will not split properly at less than 1½% stretch. You can almost tell how much stretch you are getting by the way the ends split at the front of the cylinder.

G. W. Morris, Avondale Mills, Birmingham, Ala.: We ran tests to determine the relation between stretch and end breaks. The breakage went up almost in direct proportion to stretch above 1½%.

Question No. 4. *Give your experience with rubber or synthetic squeeze rolls. Is it necessary, in using them, to have different types for the front and back rolls?*

Is it necessary to make any change in the size mix?

Do the rolls make any difference in the amount of size applied?

Give your buffing procedure, as to method and frequency.

Eight mills sent in written answers to this compound question. Three mills are running rubber or synthetic rolls only on the back squeeze roll, two are running them on both the back and front rolls, two found them unsatisfactory, and one did not state which roll was covered with the material.

Mill No. 3 wrote: "From our experience with rubber squeeze rolls, which are of the recent type, we find that they cannot be used except on the back roll. If used on the front, there is too much sizing left in the yarn. On the front, we use a plain roll covered with a wool blanket. It is not necessary to change the size mix if the rolls are used in this way. We have been using the rubber rolls 15 mo. and have not had them buffed."

Mill No. 4: "We have been experimenting with four synthetic squeeze rolls, of the recent type, weighing 700 lb. We use the same roll on front and back and do not make any change in the size mix. However, we did get an increase of 0.50 to 0.75% in size content.

"We buff our rolls only as we think it is necessary. One of the points to watch with rubber or synthetic rolls is to be sure that you raise the rolls completely off the immersion rolls when not in use. If you let the rolls stay down during a shift, it will flatten the synthetic rolls and make it necessary to re-buff. If you do not re-buff, they will crack. We do our buffing with a grinder on a lathe in the machine shop."

Mill No. 16: "We use Dayco synthetic squeeze rolls. The weight of the front roll is 575 lb. and of the back roll 450 lb. We are able to use a lighter size mix and get a more uniformly sized warp. Rolls are buffed

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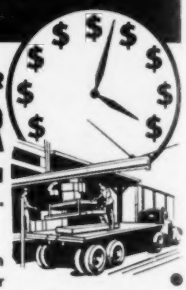

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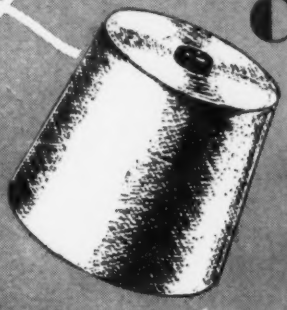

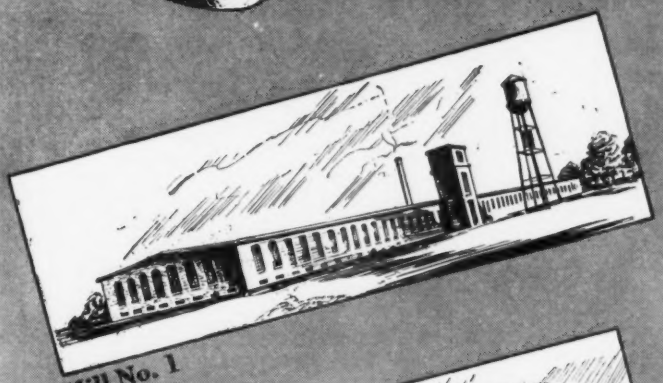

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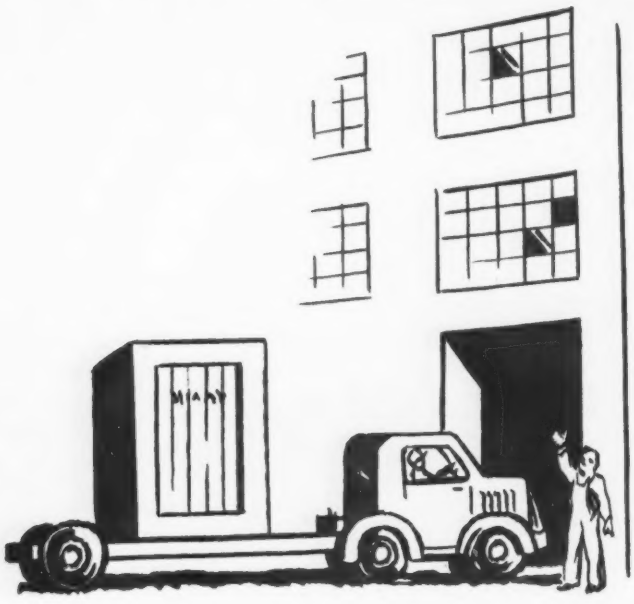

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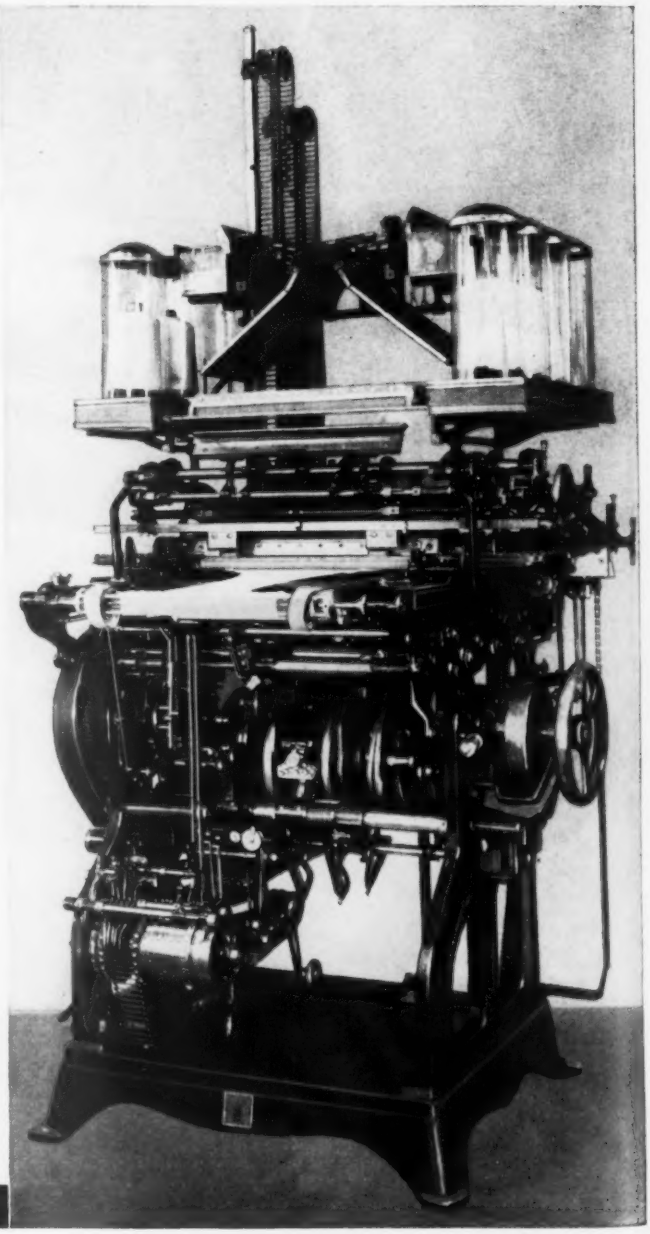

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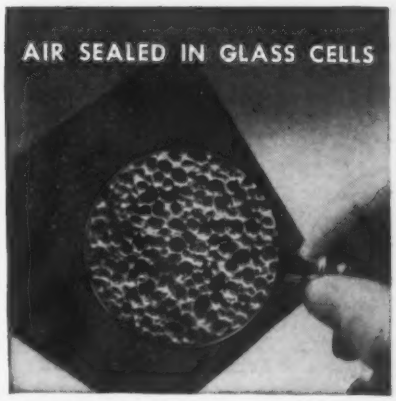

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in our machine shop by placing them in a lathe and using a fine emery wheel. It is necessary to buff them approximately each 6 to 8 months."

Mill No. 22: "We installed two rubber-covered rolls September, 1945; and at present one is still running, while the other has been re-covered twice. We find that we size about 1.5% heavier. We have not buffed either roll."

COLORED YARN. Mill No. 25: "We have two rubber squeeze rolls. One has been running a year, and the other only a few months. We are running them on a slasher on colored yarn, and we have not been able to use them as finishing rolls because of graying the yarn. We have not changed our size mix, and there is no difference in the amount of size applied. We have not buffed the rolls."

Additional information revealed at the meeting included:

Elm City Plant, Callaway Mills, LaGrange, Ga.: We use rubber rolls only on the back. If used on the front rolls, the rubber covering leaves too much size on the yarns. The rolls we are using are 15 mo. old. They have not been buffed.

Bibb Mfg. Co., Columbus, Ga.: We use synthetic covers for the back squeeze rolls, but they are not satisfactory for the front rolls. We have had one on for 3 yr. It is showing some signs of deterioration at the edges where yarn does not come into contact with it. The roll has not been buffed in 3 yr. The synthetic cushion is 2 in. thick. We found that if a synthetic roll is used in the font, the yarn is not sufficiently dressed and the surplus starch cakes on the yarn.

The Dixie Cotton Mills, LaGrange, Ga.: We use synthetic squeeze rolls in the front and back. The front roll weighs 575 lb. and the back roll 450 lb. We use a lighter size mix and get more uniform sizing. Buffing is done in the shop in a lathe with a fine emery wheel. One roll has been buffed once in 2 yr. of operation. Warp numbers range from 12s cotton to 20s viscose-and-acetate rayon, and ends range from 2,000 to 4,500.

TAKE-UP INCREASES. Exposition Cotton Mills Co., Atlanta, Ga.: We have four synthetic squeeze rolls; two have been running 2 yr. and two have been running 1 yr. All rolls weight 700 lb. We have made no change in the size mix. We have had an increase of ½ to ¾% in size take up. We do not run our slashers on the third shift, and at the end of the second shift we raise the top rolls to prevent the synthetic cushions from flattening.

Avondale Mills, Alexander City, Ala.: We have three slashers equipped with rubber-covered squeeze rolls. The front roll weighs 700 lb., and the back roll weighs 450 lb. They are covered with 1-in. cushions. We have one 7-in. air roll on the back made of a different kind of material than steel that weighs

TABLE II—DATA ON SLASHER EQUIPPED WITH REEVES VARIABLE-SPEED DRIVE (Mill No. 4)

Style	Ends	Yarn Number (av.)	Twist Mult.	Percent Stretch	Type Lease	Steam Pressure	Std. yd. per min.	Recom. % Size
1742	1944	14.0	4.89				55	
1744	1820	19.0	4.80				70	
1745	2262	22.0	4.80				70	
1749	4040	19.0	4.80				45	
1750	1945	19.0	4.80				70	
1751	1725	24.25	4.69	1.5	Struck	10 lb.	70	12.5.
1752	1895	19.0	4.80				70	
1753	2716	19.0	4.80				70	
1754	2936	22.0	4.80				70	
1755	3276	22.0	4.80				70	

TABLE III—OILING SCHEDULE OF MILL NO. 12—SLASHERS

Part	Cycle	Lubricant
Cylinder	1 each 72 hr.	Cylinder Oil
Size box	1 each 24 hr.	Pressure Lubricant
Press roll	1 each 24 hr.	Pressure Lubricant
Creel	Each Set	
Fan		
Carrier roll		
Drag roll		
Friction	1 each 8 hr.	Engine Oil
Side Shaft		
Measuring roll		
Traverse roll		
Friction	1 each 144 hr.	One Pt. Engine Oil
Reeves Drive	1 each 24 hr.	Grease
Pump (grease bearings)		Pressure Lubricant
Kettle (bearings)	1 each 8 hr.	Engine Oil
Pump (oil bearings)		Engine Oil

Keep Textiles on the Upswing with Hooker Chemicals

"Textiles on the Upswing" headlines an article in a recent issue of BUSINESS WEEK—and the reason for this upswing—"Most buyers, finding that the new cloth was of good quality, ordered more."

Smart textile buyers buy quality. And that goes for buyers of chemicals, too. Dye and textile chemists who want to keep textiles on the upswing by maintaining their high quality standards will find dependable allies in Hooker chemicals. Some of the Hooker chemicals used in the dye and textile industries are listed below. Technical Data sheets will be sent when requested on your company letterhead.

PRODUCT	FORMULA	DESCRIPTION	SUGGESTED USES
Benzoic Acid	C_6H_5COOH	White Crystalline Solid.	Mordant, preservative in preparation of textile sizing, manufacture of dyes.
Caustic Soda	Na OH	Liquid, Flake, Solid.	Manufacture of viscose rayon, mercerizing cotton, bleaching, dyeing and printing textiles, organic intermediates.
Chlorine, Liquid	Cl_2	Orange Liquid	Preparation of bleach liquors, water purification.
CP-40 Chlorinated Paraffin	$C_{26}H_{46.5}Cl_{7.5}$ (average)	Light viscous liquid averaging 42.5% Chlorine	In compositions for waterproofing and fireproofing fabrics.
CP-70 Chlorinated Paraffin	$C_{24}H_{29}Cl_{21}$ (average)	White Powder averaging 70% Chlorine.	In compositions for waterproofing and fireproofing fabrics.
Lauryl Pyridinium Chloride	C_5H_5N-$ClC_{12.6}H_{26.2}$	Tan colored semisolid.	Cationic detergent in rayon industry.
Muriatic Acid	HCl in water solution	Commercial grade: light yellow liquid. White grade: colorless liquid.	Textile dyeing and finishing, manufacture of dyestuffs.
Paradichlorbenzene	$C_6H_4Cl_2$	White to clear transparent crystals.	Mothicide; manufacture of dye intermediates and other synthetic chemicals.
Sodium Sulfhydrate	Na SH	Light yellow colored solid in flake form.	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide	Na_2S	Light salmon colored solid in flake form.	Desulfurizing rayon; calico printing; sulfur dye baths, manufacture of dyestuffs.

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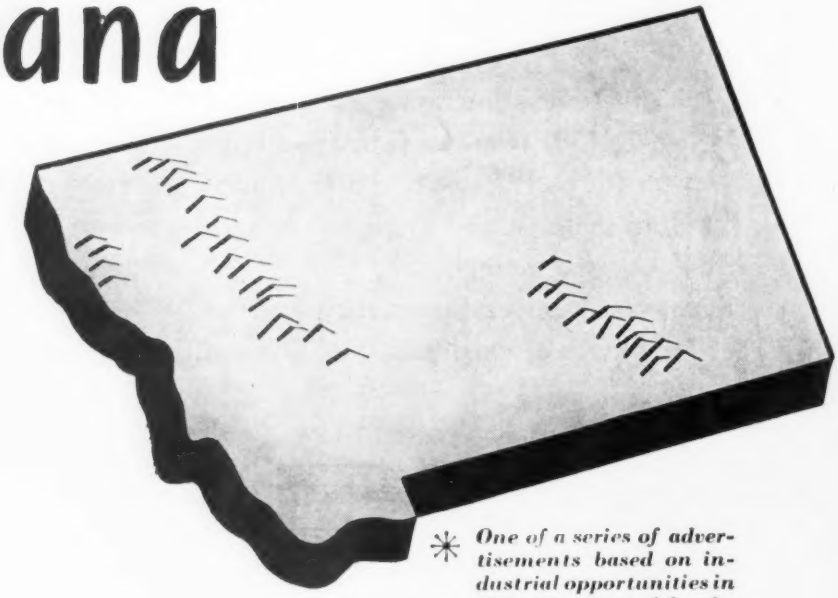

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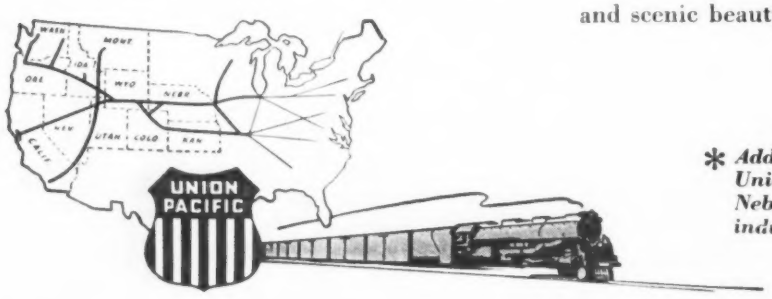
Montana welcomes new industry. It has the space, materials, facilities and manpower to encourage firms seeking new locations. Additional advantages are good living conditions, an excellent educational system and scenic beauty.



* *Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebr., for information regarding industrial sites.*

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If she knew as much about drawing sliver as she does about hemlines — she'd say "Medley Drawing, Please!" — because she would know that good fabrics come from good yarns that come *only* from good drawing.

Knowing that good yarns cannot be made from bad drawing, more and more mill men throughout the industry are saying "Medley Drawing, Please!" Yes, Medley's 5 roll, "8 ends up" drawing is delivering day in, day out, a more uniform sliver. More than that, Medley drawing handles all fibers, including cotton, wool, synthetics, ramie and blends in all staple lengths from very short up to 13 inches.

Medley can supply new frames equipped with 5 roll, 8 ends drawing, or 4 roll, 6 ends conventional, each featuring the Medley sealed-in ball bearing top roll, the quiet helical gear drive — or your present frames can be changed over to this more efficient drawing.

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★

only 271 lb. instead of 450 lb. We use 40 lb. of air on this roll. We have not changed our size mix.

We run from 9s to 38s yarn. The slashers are equipped with Reeves drives on the side shafts. Stretch is checked by using a yardage counter on a section beam, squeeze roll, and loom beam. We find that most of our stretch occurs between the creel and the top squeeze roll.

Swift Mfg. Co., Columbus, Ga.: We were unable to use synthetic rolls on the front because they did not dress off the excess size. We did not try the covers on the back rolls.

Pepperell Mfg. Co., Lindale Div., Lindale, Ga.: We use the synthetic covers on the back rolls but not on the front rolls. We tried them on the front, but the yarn was given a gray appearance by excess size left on it. The rolls we are using have been running 1½ yr. without being buffed.

Question No. 5. *Do you have a preventive maintenance program for slashers? If so, please give your list and schedule of check points, including the employee who does the job and how often it is done. Give in the same manner your slasher oiling schedule.*

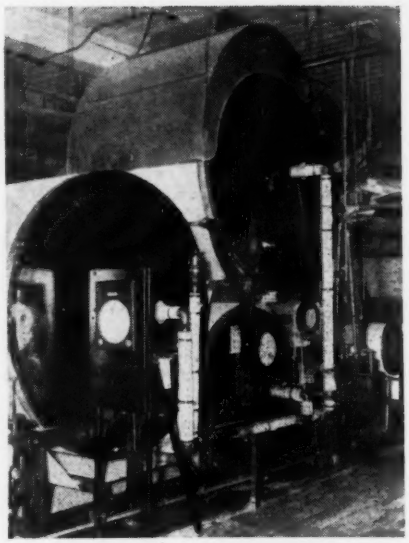
Mill No. 4 wrote: "The slasher foreman checks the slashers at the beginning of each shift. If there are any repairs to be made, the foreman and slasher tender make them. If they need help to make the repairs, the mechanical department is called in to assist them."

Mill No. 7: "Each slasher man checks his slasher when a set runs out to see if any minor repairs are needed. He also checks all rolls and bearings; and if needed, he oils and greases the bearings. Slashers are oiled at the beginning of each shift by the tender. All ball bearings are greased once each week, with the job alternating between shifts."

Mill No. 11: "The first-shift slasher fixer, who also has the beamers and twisters, makes a general inspection of the slasher each morning. Once each week the fixer takes the friction drive apart and cleans and inspects it, making repairs as needed. The size box, size-box coils, cooking kettle, storage kettle, steam coils, paddles, and size pump are inspected at the end of each week. If repairs are needed, they are made over the week end.

"The oiler, who also has the beamers and twisters, gives the slasher a general oiling at the beginning of each shift. All Alemite fittings are serviced three times each week."

Mill No. 12: "Our slashing overseer checks each slasher each week end, making notes of major defects and correcting minor defects on the spot. Major defects are generally handled by the machine shop. Each slasher tender



***A Westinghouse variable-speed drive,** Brown moisture control, and Brown steam control are installed on this three-cylinder slasher at Columbus Mfg. Co., Columbus, Ga. Advantages pointed out by using the equipment are: (1) accurate moisture content maintained at all times, (2) increased production, and (3) less kinking of the ends in the creel as a result of better starting and stopping of the slasher.*

is responsible for oiling his slasher. [See oiling schedule, Table III, p. 252.]

Mill No. 25: "Our fixer has a check sheet, and each slasher is checked once a month. [See Table IV, p. 258 for check points.] When defective parts have been replaced, they are checked off and the sheet is turned in to the overseer.

"The fixer does all the greasing and oiling except the plain bearings that are oiled each 8 hr. These bearings are oiled by the slasher tender. Fixer's schedule is as follows:

Size rolls—grease every week.

Delivery rolls—grease every 2 weeks.

Contact rolls — grease every 2 weeks.

Cylinder—grease every 3 months.

Question No. 6. *What system do you have for the control of yarn waste in the slasher room?*

What do you consider to be the normal percent of hard- and soft-thread waste at the slasher?

Mill No. 2 wrote: "We weigh the section beams at the slasher and keep a close check at the warpers as to the yardage put on each section beam in the set. On our dye-beam sets, we use a staggered yardage. Our soft waste is about 0.38% and our hard waste about 0.46%."

Mill No. 3: "We weigh our waste at the end of each 8-hr. shift. Each slasher has a special box for waste, and a record is kept of the waste made by each tender. We consider 0.5 to 1.0% waste normal."

Mill No. 4: "Our percentage of soft waste is 0.25%, hard waste 0.26%, on

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For Spinning Fine Cottons and Synthetics

•

Here is *the* saddle for weighing front and back rolls when spinning fine cottons or synthetics. The back bearing is adjustable to any position within 1½" on the shaft of the saddle. Thus when changes in roll settings occur, accurate adjustment is possible without worry about "chatter" or other variations, however slight.

Other combinations, not shown here, permit a greater range of adjustment of the back bearing. When you want the best saddle for your fine cottons or synthetics specify the Dixon *Lock-In* Jump Saddle.

•

DIXON LUBRICATING SADDLE CO. + BRISTOL, R. I.

three-cylinder slashers. Our sets run from 5 to 13 beams."

Mill No. 6: "Section beams are measured accurately at the warpers. When a set is run out on the slasher, the loom beam is not doffed until a new set of section beams has been tied on. The beam is then doffed as close to the 'tie on' as possible. During the period that the set is being changed, steam is cut off the slasher. We consider 1% waste normal for our plant."

Mill No. 11: "We try to make section beams at the warper with the correct number of yards, thereby eliminating soft waste at the back of the slasher. We have approximately 8 yd. of soft waste and 10 yd. of hard waste at the change of each set. Our normal hard waste at the slasher is 0.254%; soft waste, 0.112%."

Mill No. 13: "Creels are run as far down as possible. When broken ends show up back of the size box, the yarn is marked. The slasher is run until this mark reaches the front. The yarn is then taped on the beam.

"We keep warps in lease for both quality and prevention of break-outs. We pay careful attention to the setting of the combs when changing to beams of other widths on the same styles.

"Our total hard waste for weaving and slashing runs 0.6% and slasher soft waste runs 0.3%."

Waste percentages given by all the mills were:

Mill No.	Soft (%)	Hard (%)	Total (%)
1	—	—	1.0 to 2.0
2	0.38	0.46	—
3	—	—	0.5 to 1.0
4	0.25	0.26	—
5	0.10	0.20	—
6	—	—	1.0
7	½ to 1 lb. per beam	10 to 12 lb. per set	—
11	0.112	0.254	—
12	—	—	0.5
13	0.30	0.60	—
16	0.40	0.25	—
17	1.0	0.60	—
18	—	—	0.80
20	—	—	0.75
22	—	—	0.40
24	0.33	0.50	—.

Question No. 7. *What is your loss in sizing materials? This figure should be the difference between the actual pounds of the materials used and the pounds gained at the slasher, taking into consideration the yarn waste.*

Mill No. 11 wrote: "We have approximately a 40% loss in sizing material."

Mill No. 12: "We have made drying tests on our starch and compounds at 218° F. for 5 hr. and find an average of 11.75% moisture in our starch and 5.5% in our compounds. At the proportions in which we use these items, we have an average of 11% moisture in our sizing materials.

"Our tests also show that our warp yarn gains approximately 1.25% moisture during the sizing operation. Our moisture after slashing is 7.25%.

"We weigh all our section beams, sized warp, and waste. We also keep records of all sizing materials used. We find that for a period we have a loss of 18% in our sizing materials.

"This figure seems to us to be high, since we can account for only 3.75% loss due to moisture and 1.0% loss due to week-end dumping."

Mill No. 13: "Based on actual pounds of materials used and allowing for waste, we have a loss in sizing materials of 10%. This would include size dumped and weave-room flyings."

Mill No. 20: "There is a loss of 20 to 25% in sizing materials, based on actual pounds used. This includes the size lost in shedding as well as that lost at the slashers."

Question No. 8. *What is your experience with the patented leasing device on slashers?*

No experience with this device was reported.

Table IV—Slasher-Room Inspection Form
(Mill No. 25)

Creels:	☐ Cone hangers ☐ Selvage guides ☐ Bolts and washers ☐ Section-beam stands ☐ Starting levers
Size boxes:	☐ Lever controls ☐ Guide rolls ☐ Size box ☐ Bottom squeeze rolls and bearings ☐ Roll-lifting device ☐ Top squeeze rolls ☐ Yarn-winding mechanism ☐ Cut-mark mechanism
Side shaft:	☐ Gearing to size box ☐ Gearing to delivery rolls ☐ Gearing to cylinders
Cylinder:	☐ Small back cylinder ☐ Large back cylinder ☐ Large front cylinder
Misc.:	☐ Cone shafting ☐ Fan ☐ Frictions ☐ Delivery roll ☐ Drag roll ☐ Press rolls and levers ☐ Rib rolls ☐ Contact rolls ☐ Pipes and valves ☐ Mixing kettles ☐ Storage kettles ☐ Recording instruments ☐ Overhead shafting ☐ Motors ☐ Overhead tracks and switches ☐ Trolleys ☐ Electric hoists and chains ☐ Electric lights and switches.

Textile Equipment News

(*Continued from page 168*)

the other half of the sheave, has a spiral bore and is placed on the spiral-shaped extended hub of the large member at the desired pitch diameter, then turned and locked on the hub. No threads or keyways on the shaft are required, and adjustment to proper pitch diameter is easily made.

(*Continued on page 260*)

twitchell oils

FOR COTTON FINISHING
both regular and sanforized fabrics

WRITE FOR DATA SHEET NO. 301

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• A 100 per cent sulphonated mineral oil, completely dispersible in water. Twitchell Oil 3X, the first oil designed to increase rewetting speed, has been constantly improved. Where a real soft hand is not sought—non-staining, non-oxidizing, 3X is efficient and economical.

twitchell oil 476

• Emery's newest mill-tested oil for cotton finishing is a straight Fatty-type wetting-back agent which produces softest hand and excellent speed of rewet. Oil 476 is completely dispersible in water, non-staining, non-oxidizing.

twitchell oil 507

• A mineral-fatty oil, Twitchell Oil 507 was developed as a companion to Oil 476 to provide fast rewet with less effect on hand. It is non-staining, non-oxidizing, completely dispersible in water.

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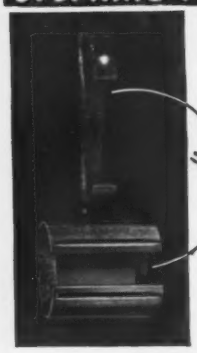

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U. S. offers a complete line of travelers suited to every textile fibre and process—but above all, we put emphasis on Quality, aiming always to give you travelers with the durability, finish and uniformity that enable you to realize high production of high quality yarns.

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123 Treaty Rd., Drexel Hill, Pa.
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Concord, N. C.—Box 83—Phone 8366
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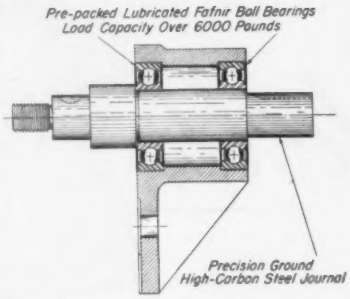
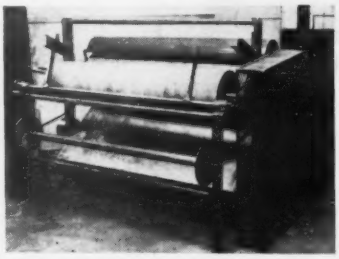
Providence, Box 1187—Gaspee 0100

Ball-Bearing Cam Unit Prevents Wear



***Pause in ring-rail traverse** and slough-ing-off caused by cam-unit bearing wear are prevented by use of a new ball-bearing cam unit, it is reported by the manufacturer, Precision Gear & Machine Co., 2001 No. Tryon St., Charlotte 1, N. C. The journal is made of high-carbon steel, and rides on pre-packed ball bearings which require no lubrication.*

Spool Stripper Cards Waste

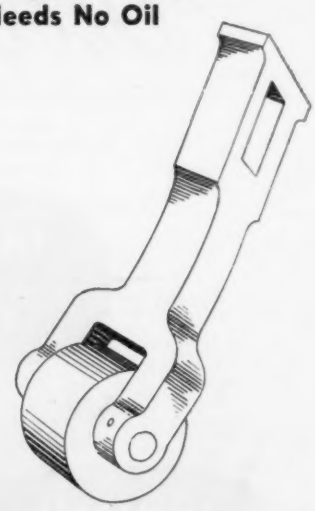


***Waste is removed** from spools and carded for re-use by this new spool stripper. (Lowell)*

Stripping of 5 to 10 spools per minute without injury to the spool barrel is claimed for the new G & Y spool stripper recently announced by Lowell Equipment Co., 140 Powell St., Lowell, Mass. Both old and new spools can be stripped, and cutting of grooves in the barrel is eliminated. Experience is not required for operation, and savings of 50% in labor are reported.

The roping left on the spool is carded off by the main cylinder which in turn is cleaned by a fancy roll. Stock is transferred to a stripper roll from which it is removed by a comb. The carded roping thus obtained may be entered into the card feed in place of regular roping, reducing the chances of uneven feeding.

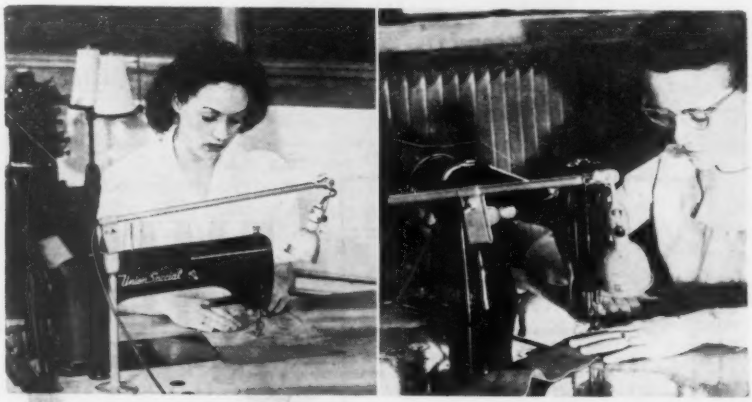
Stripper Cam Roll Needs No Oil



***A ball-bearing stripper-cam roll** for cotton cards has been developed by Precision Gear & Machine Co., 2001 No. Tryon St., Charlotte, N. C. New cam roll will not choke up with lint, prevents wearing of flat places on the cam or roll, and requires no lubrication, it is claimed.*

Lighting Unit Announced For Sewing Machines

Lighting units designed for either direct attachment to sewing machines



***A new lighting unit** for sewing-machine operations may be mounted on the machine or fastened to the table. (Fostoria)*

ALKANOL* B
ALKANOL* RW
ALKANOL* WXN
DUPONOL* D
DUPONOL* G
DUPONOL* LS
DUPONOL* WA
DUPONOL* 80
HYDRAPHTHAL*
MP 189
MERPENTINE*
MERPOL* B
MERPOL* C

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Whatever your requirements in comber noils, card strips, spinners and rovings (machined and unmachined), colored card strips, soiled card and cotton linters, we can meet your *exact* requirements.

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RAYCO
COTTON & SYNTHETIC FIBERS

or mounting on machine tables have been announced by Fostoria Pressed Steel Corp., Fostoria, Ohio. Both models operate on 110-v. circuits, and accommodate double-contact, bayonet-base lamps.

The table model has a 21-in. horizontal arm which can be moved backward or forward through a clamping bracket which is fastened to a flexible joint permitting movement in any direction.

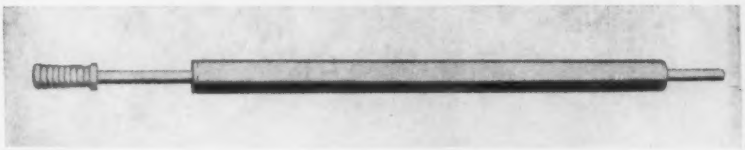
The machine-mounted model is equipped with a stud that fits the threaded hole on the rocker-arm housing. It may be adjusted in the same manner as the table model.

The reflector on both models is mounted in a ball-and-socket joint for added flexibility. The finish is optional; either smooth black or hammerine silver is available.

Lap Pin Rolls On Ball Bearings

Evener laps and increased production resulting from elimination of picker stops due to clogged loggerheads are claimed as advantages of a new ball-bearing lap pin recently developed by Precision Gear & Machine Co., 2001 North Tryon St., Charlotte 2, N. C.

The pin revolves freely on four lifetime-sealed ball bearings which cannot become clogged with lint and which never require lubrication. The journal remains stationary. The ends of the pin are provided with hardened steel caps which prevent damage to pin ends, and the outside of the pin is tapered and smooth-finished for easy removal from the lap.



***Production stops** due to clogging of loggerheads are prevented by use of the ball-bearing lap pin. (Precision)*

Mohair-Rayon Blends Offer Unique DYEING PROBLEMS

***HIGHLIGHTS:** Raising of nap is critical operation — Proper selection of dyes essential — Unevenness prevented by extracting promptly after dyeing.*

By K. E. MARSDEN
Leeds, England

THE SPECIAL NATURE of mohair-rayon fabrics, recently prominent, especially in Britain, has created unique new problems for the dyer.

The cloth under consideration varies from 16 to 20 oz. per yd. and 54 to 56 in. in width. It is usually dyed in the piece and given a brushed finish. The main operation necessary to obtain this finish is raising, performed either before or after dyeing as occasion demands. The raising can be performed on a card-wire-type gig; but, where it takes place prior to dyeing, it is advisable to run a single side over the gig after dyeing and tentering for straightening purposes.

The first essential in the dyeing is the choice of neutral-dyeing wool colors for the mohair, and direct cotton dyes for the viscose rayon. These should be suitable for application by the one-bath union method. The wool colors chosen should be those not too quickly absorbed by the fiber; the direct dyes, those which do not migrate unevenly after being absorbed by the fiber.

SUITABLE DYES. In practice, dyes suitable for this purpose have been:

Neutral wool colors: Indian Yellow, wool Red 2B, Erio Brilliant Fuchsine 2BL., Cyananthrole R., Coomassie Brilliant Blue and Navy Blue, Benzyle Green B, and Orange 2 types.

Direct cotton colors: Solophenyl Yellow, Direct Blue 2B., Chloramine Fast Scarlet 4BS., Chlorazol Fast Red K., Diphenyl Green KGI., Formic Black, Chloramine Fast Black B., Direct Violet R., Diphenyl Catechine G. types.

Additions to the dyebath include 10 to 20% Glauber's salt, with 1% of a sulphonated fatty alcohol detergent in the case of light shades. The dye

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A COMPLETELY SAPONIFIABLE SYNTHETIC ESTER

- **Uniform low viscosity insures even take-up**
- **Promotes clear, uniform stitch**
- **Prevents stripping**
- **Does not stain**
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No. 2 — Ideal for general oil type lubrication, ring oiled bearings, wick feeds, sight feeds and bottle oilers.

No. 8 — Because of high film strength and long life it reflects outstanding performance in most types of enclosed gears (speed reducers).

No. 107 — One of the most popular grease type products for general application by pressure gun or cups.

No. 70 — For a wide range of grease applications, especially at temperatures above 200 degrees F.

No. 130-AA — Known nationwide as the superior lubricant for open gears, heavy duty bearings, wire rope, etc.

BALL BEARING — This is the LUBRIPLATE Lubricant that has achieved wide acclaim for use in the general run of ball and roller bearings operating at speeds to 5000 RPM and temperatures up to 300 degrees F.

LUBRIPLATE

FISKE BROTHERS REFINING CO.

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DEALERS FROM COAST TO COAST

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liquor is brought to the boil in 30 to 45 min., after which steam is turned off. A further 30 min. run without steam takes place and then the first sample swatch is taken for matching purposes. Where salting to shade is necessary, it is advisable to give a little steam after making the color addition; but the boil must not be reached. A suitable temperature to aim for is 180°F.

One of the early problems to face with cloth of this type if rayon waste has been used in its manufacture is the covering of acetate "spots" due to improper mixing of fibers. These spots show up white after dyeing and tentering in similar fashion to cotton burls. If Indian Yellow or Orange 2 types are included in the dye, the spots will show slightly tinted. Outside of preventing any adulteration of the viscose fiber, there are two ways to remedy this defect: (1) Run the pieces over a burling board, removing the white acetate spots with a burling iron; during raising, these spots tend to become loosened, making removal on the burling boards a less-difficult proposition. (2) Make small additions of suitable acetate rayon dyes to the dye, varying the dyes used according to the shade desired on the piece.

A much more difficult problem arises when large quantities of acetate rayon get mixed with the viscose rayon. In this instance, all three fibers—acetate, viscose, mohair—must be covered. Suitable acetate dyes must then be used along with the neutral-dyeing wool colors and direct cotton colors. Most acetate dyes stain mohair a little, and this must be allowed for in calculating the necessary neutral wool colors. The first object in the dyeing is to get the acetate covered to the required shade; second, the viscose; third, the mohair.

OTHER TROUBLES. Further trouble experienced is the appearance of a white powder on the cloth after dyeing and tentering. Raising seems to bring this powder to the surface, and it can be removed by passing the cloth over a brushing mill after raising has been completed. This powder is believed to be extremely short fibers which fail to absorb dye during processing. During preliminary wet-process work, scouring, milling, washing-off, and dyeing, these fibers separate out and are pressed back in the cloth in the form of a white powder.

Unevenness of color is another fault to be experienced where quick-migrating colors are used. Colors of this type are those which tend to be absorbed too quickly by the fiber during dyeing; and which, during washing, wringing, or hydro-extracting, tend to migrate or loosen, thereby forming uneven patches of color. It is wise to hydro-extract and tenter the pieces immediately after dyeing is completed.

A further factor causing unevenness is the "slipping" tendency of the mohair, which causes the cloth to form into folds during dyeing. Crabbing or wet-blowing the cloth prior to dyeing assists in obviating this fault; the cloth becoming firmer and possessed of less tendency to fold.

Bad opening and carding can be responsible for defects not visible until after the cloth is dyed, tentered, and raised. The fault lies in short lengths of vegetable matter being drawn to the surface of the cloth during raising, showing up white or lighter in shade than the bulk. The only cure lies in cotton-staining the pieces cold on a washer, but prevention of future trouble can be insured by raising the pieces before dyeing. This latter procedure brings the short lengths of fiber to the surface, and so facilitates penetration during dyeing.

A better finish is usually obtained on pieces which have been re-dyed. This fact can probably be attributed to the intermediate raising between first and second dyeings, with the boil being touched in the latter.

LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of Textile World, published monthly at Albany, N. Y., for October 1, 1947.

State of New York} ss.
County of New York}

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. A. Gerardi, who, having been duly sworn according to law, deposes and says that he is the Secretary of the McGraw-Hill Publishing Company, Inc., publishers of TEXTILE WORLD, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the name and address of the publisher, editor, and business manager is: McGraw-Hill Publishing Company, Inc.; Editor, C. W. Bendikso; Managing Editor, W. B. Dall; Business Manager, William Buxman, all of 330 West 42nd Street, New York 18, N. Y.

2. That the owner is: McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City. Stockholders holding 1% or more of stock: James H. McGraw; James H. McGraw, Jr.; James H. McGraw, Jr., Curtis W. McGraw and Willard T. Chevalier, Trustees for: Harold W. McGraw, James H. McGraw, Jr., Donald C. McGraw and Curtis W. McGraw, all of 330 West 42nd Street, New York City; Edwin S. Wilsey and Curtis W. McGraw, Trustees for James H. McGraw, 3rd, Madison, New Jersey; Curtis W. McGraw, Donald C. McGraw, both of 330 West 42nd Street, New York City; Mildred W. McGraw, Madison, New Jersey; Grace W. Mehren, 536 Arenas St., La Jolla, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

J. A. GERARDI, Secretary.

McGRAW-HILL PUBLISHING COMPANY, INC.

Sworn to and subscribed before me this 26th day of September, 1947.

ELVA G. MASLIN.

[SEAL] (My commission expires March 30, 1948.)

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Books of Interest

Flameproofing Agents and Methods Up to Date

FLAMEPROOFING TEXTILE FABRICS, by Robert W. Little; Reinhold Publishing Corp., 330 West 42nd St., New York 18, N. Y.; 410 pages, $6.75.

The need for practical methods to combat fabric flammability was a problem in many branches of the Armed Services during the war. Researches were undertaken by the Quartermaster Corps, the Army Corps of Engineers, the Navy, the Chemical Warfare Service, etc. The results of these researches conducted over a period of about three years have been collected and are presented in this volume, together with related material from other sources.

Robert W. Little, director of research, Ellicott Laboratories, Lawrenceville, N. J., is the editor-in-chief, assisted by a board of four specialists who were involved in the original researches and who now hold positions in industry or in institutions of learning. There are 17 contributors. The material is presented in the form of a comprehensive survey rather than a technical report of the original investigations. It is broken down into three main sections: (1) the mechanisms of thermal degeneration of cellulose and the chemical or physical phenomenon of flameproofing; (2) the methods used in processing and evaluation of flameproofed fabrics; (3) the various applications which exist for flame-retardant treatments.

This book seems to draw together all the data currently available on flameproofing and brings out some new data since much of the military work had not previously met general publication.

A Vat-Dye Compendium

VAT DYESTUFFS AND VAT DYEING, by M. R. Fox; John Wiley & Sons, Inc., 440 Fourth Ave., New York; 324 pages, $5.50.

The author is a member of the technical and research staff of L. B. Holliday & Co., Ltd., Huddersfield, England. First published in England last fall, this book met a reception which encouraged the publishers to issue an American edition. Much of the material in the book is American in origin: 11 out of 23 dye manufacturers whose products are noted in a list of analogous dyestuffs are American; 6 out of 9 listings of periodical literature for 1945 are American; however, only 1 out of 8 machinery manufacturers whose appliances are illustrated in the chapter on machinery is American.

While this book is useful to the advanced technician, the content is presented in such a way as to serve a practical chemist or a student. The early chapters present the history and basic chemistry of vat dyestuffs and thus provide a background for understanding the body of the work which deals with the application of these dyestuffs to many types of textile materials. In addition to dyeing, printing and discharging are also dealt with.

An interesting chapter is devoted to the identification of vat dyestuffs in substance or in dyed or printed patterns, whether single or in mixtures.

The list of analogous dyestuffs and index thereto occupies 67 pages. It includes products of American, British, German, Swiss, French, and Canadian makers; but expressly omits Japanese, Italian, and Russian vats because of the scanty information presently available.

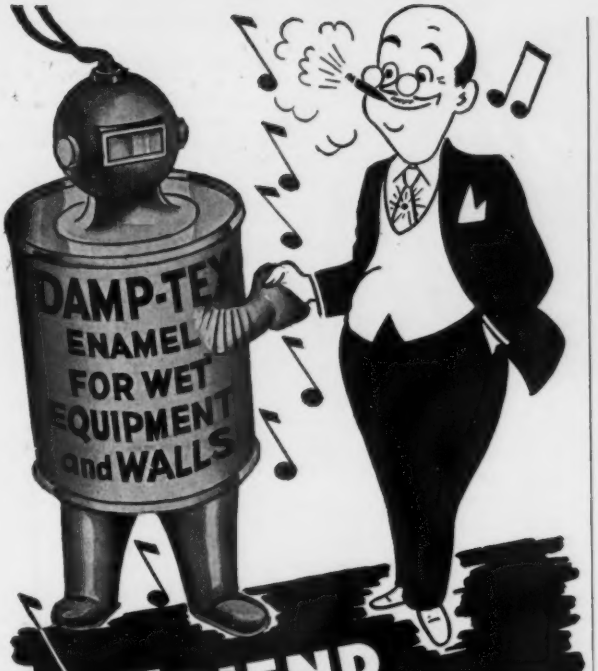
The author touches briefly on continuous piece-dyeing ranges for vat dyestuffs and on continuous steaming and ageing based principally on machinery of British make.

New Fluorescent Data Is Included

FLUORESCENT LIGHTING MANUAL, by C. L. Amick, General Electric Co., Nela Park, Cleveland, Ohio; McGraw-Hill Book Co., New York; 318 pages, $4.00.

This second edition of Mr. Amick's manual not only contains revisions but numerous additions occasioned by the rapid advances in the development of fluorescent lamps and lighting techniques. New type lamps are covered and new data on many aspects of lighting problems are given. The original edition made its debut in 1942.

Titles of the new book's ten chapters are as follows: The Fluorescent Lamp, Auxiliary Equipment, Operating Characteristics, Installation Hints, Service Suggestions, Luminair Selection, Lighting Design, Color Quality, Applications, Lighting Economics.



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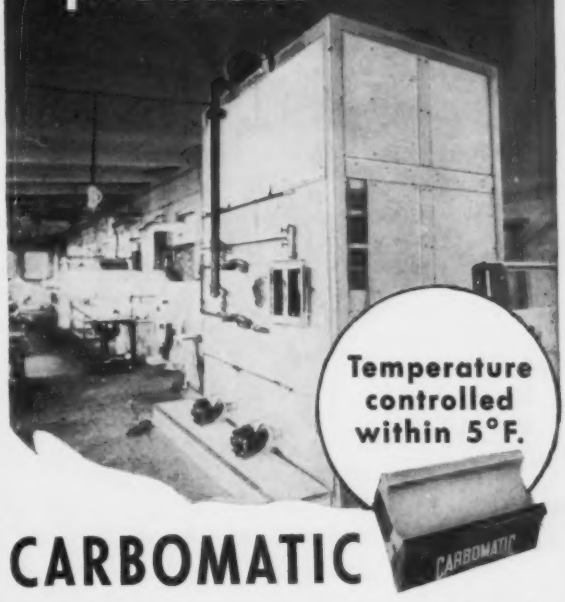

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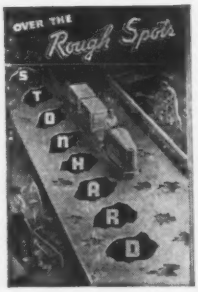

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News of the month

CTI Meets. The annual meeting of Cotton-Textile Institute took place at the Waldorf-Astoria, New York, Oct. 22 and 23. Sumner H. Slichter, Lamont University Professor at Harvard University, spoke at the opening session. At the luncheon Oct. 22, Chauncey Parker, director of administration, International Bank for Reconstruction & Development, spoke. Congressman Fred A. Hartley, co-author of the Taft-Hartley Act, was chief speaker at the banquet of which George A. Sloan, former president of the institute, was toastmaster. At the morning meeting Oct. 23, Gilbert H. Montague, an authority on anti-trust legislation, spoke. Leo Wolman, professor of economics, Columbia University, discussed recent developments in the field of labor. Brig. Gen. Herman Feldman, assistant quartermaster general, discussed procurement policies and procedures of the armed forces.

Carpet Men Meet. The annual meeting of the Carpet Institute was held Oct. 30 at Waldorf-Astoria, New York. Three speakers from outside the industry appeared on the program: Dr. Jules Backman, professor of economics, New York University, on "What's Ahead for Business"; Fred Eldean, president, Fred Eldean Organization, Inc., on "How Some Industries Are Solving Their Public Relations Problem"; and A. H. "Red" Motley, president and publisher of Parade Publications, on "You've Got to Sell".

Forms Fashion Bureau. Burlington Mills, New York, has formed an intracompany group to be known as the "Burlington Fashion Bureau" to coordinate the fashion activities of the company in recognition of the dominant role fashion plays in the basic designing, as well as the dyeing and finishing, of Burlington products. Kenneth Collins, vice president and director of public relations and advertising, will serve as chairman. Grace C. Dimelow, in charge of product publicity, will serve as coordinator. Representatives have been appointed from 10 company divisions.

Textile Calendar

Textile Research Institute, annual meeting, Waldorf-Astoria Hotel, New York, Nov. 13 and 14, 1947; Laboratories Building, Princeton, N. J., Nov. 15, 1947.

National Cotton Council, tenth annual meeting, Biltmore Hotel, Atlanta, Ga., Jan. 21 to 23, 1948.

International Heating & Ventilating Exposition, Grand Central Palace, New York, Feb. 2 to 6, 1948.

Hosiery Industry Conference and Annual Meeting of NAHM, Claridge Hotel, Atlantic City, N. J., April 19 and 20, 1948.

International Exposition of Textile Machinery, Equipment & Supplies, 71st Regiment Armory, 34th St. and Park Ave., New York, May 3 to 7, 1948.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1948.

AATCC Section Gives Scholarship. The fall meeting of the Northern New England Section of AATCC held Sept. 26 at Andover, Mass., voted to set aside $1,000 from its sectional treasury as a scholarship fund and to appropriate $250 from it for a scholarship at Lowell Textile Institute for the school year 1948-49. Dr. George Wald, of the Harvard Biological School, spoke on the chemical aspects of color vision. The next sectional meeting will be at Boston, Nov. 21, when Dr. J. C. Harris, of Monsanto Chemical Co. Central Research Dept., Dayton, Ohio, spoke on detergents.

AATCC Columbus Meeting. Kempton Haynes presided at the meeting of the Southeastern Section of AATCC in Columbus, Ga., Sept. 13. R. W. Jacoby of Ciba Co., Inc., Providence, R. I., spoke on "Recent Developments in Finishing". He discussed in some detail the pad-steam dyeing process, permanent finishes, non-woven disposable fabrics, starch substitutes, and fluorescent materials.

N. Y. Section of AATCC Marks 25th. Lew Hahn, general manager of the National Retail Dry Goods Association, was guest speaker at the 25th anniversary celebration of the New York section of AATCC at Kohler's Swiss Chalet, Rochelle Park, N. J., Sept. 26. He spoke on "Past and Future in Textiles From the Consumers' Point of View".

AATCC Sectional Meeting in Atlanta. The Southeastern Section of AATCC will meet Dec. 6 in Atlanta, Ga. Speaker of the evening will be Thomas R. Smith, manager, yarn dyeing department, Wiscasset Mills Co., Albemarle, N. C., and also past president of AATCC. His subject will be "A

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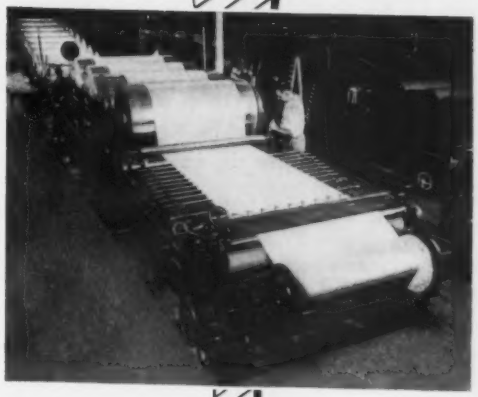

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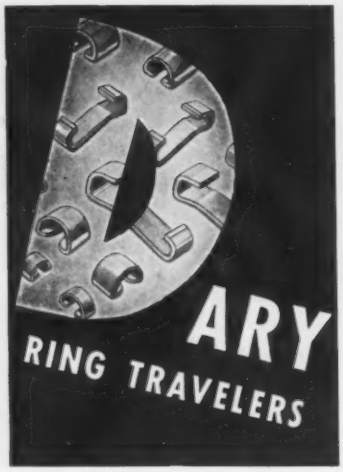

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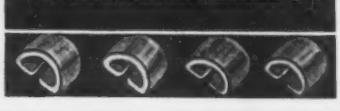

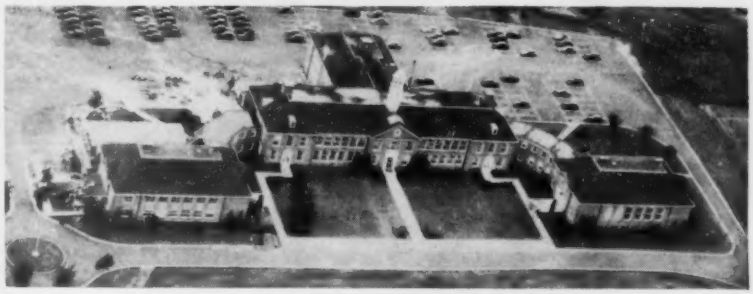

CELANESE CORP. OF AMERICA has transformed a high-school building into a modern industrial research laboratory, involving unusual design and construction ingenuity. Work was done by the Wigton-Abbott Corp., engineers and contractors. The structure, formerly the Edison Junior High School, was built in 1937-38 and operated as a school for 6 yr. before it was sold to Celanese by the City of Summit. Reconstructed as shown above, it contains a total of 59,820 sq. ft. of usable space. The interior has been completely remodeled into laboratories, offices, and special testing and storage rooms. An air-conditioning system serves 40% of the laboratories. The staff of the central laboratories at Summit consists of groups of cellulose chemists, synthetic organic chemists, dyestuff chemists, physical chemists, and chemical engineers. The greater part of the personnel was transferred from the corporation's research departments at the Newark, N. J., and Cumberland, Md., plants. Development work will still be continued at the plants, however, and work of a basic or exploratory nature will be carried out in the central laboratories or in small-scale pilot plants. Bjorn Anderson is director of central research and development.

Review of the Textile Reports of German Technical Developments". Mr. Smith was a member of the textile finishing team which went to Germany in 1945 for the Quartermaster General.

VA Establishes Textile Laboratory. The Veterans Administration has established a Laundry & Textile Laboratory at the Bedford, Mass., Veterans Administration Hospital. This laboratory will exercise technical control over the 100 hospital laundries and 20 hospital dry-cleaning plants now operated by the Veterans Administration throughout the country. This will be accomplished by testing and evaluating supplies, preparing specifications and technical bulletins, developing proper and improved cleaning practices, and the distribution of a laundry test bundle for operation control purposes. Hubert C. Normile is technologist in charge of this laboratory which will later be moved to the new Franklin Delano Roosevelt Hospital under construction at Peekskill, N. Y.

Chemical Show. News from exhibitors who are preparing for the 21st Exposition of Chemical Industries in Grand Central Palace, New York, Dec. 1 to 6, indicates that this display will preview an improved industrial economy, affecting more or less directly every form of industrial activity. As of Nov. 1, the roster of exhibitors at the exposition totals approximately 350 names. It is reported that exhibition space has been sold out.

Wool Sorting Project. A project aimed at improving the competitive position of domestic wool through the marketing of a skirted and sorted product has been announced by the U. S. Department of Agriculture. Studies will be made to determine the feasibility and cost of skirting and sorting domestic wool at ranches, concentration points, and warehouses. The Department of Agriculture will enter into agreements with state agencies, cooperative marketing associations, and wool pools for carrying out the project. Present plans call for projects at Casper, Wyo.; Portland, Ore.; Roswell, N. M.; Denver, Colo.; Minneapolis, Minn.

No Evidence of Production Restraint. Widely circulated reports to the effect that cotton-textile mills are reducing production in order to maintain prices are not borne out by official statistical data and are untrue, according to Paul B. Halstead, secretary-treasurer, Cotton-Textile Institute, in a speech before the Young Men's Board of Trade, New York, Sept. 25. During the first seven months of the current year, he pointed out, cotton mills consumed more cotton and turned out more goods than in any corresponding period for the previous three years. While mills at present are turning out cloth at the rate of 9,500,000,000 yd. annually, the amount of cotton goods available per capita to American consumers is slightly less than in 1939, considering the current excess of exports over normal and the

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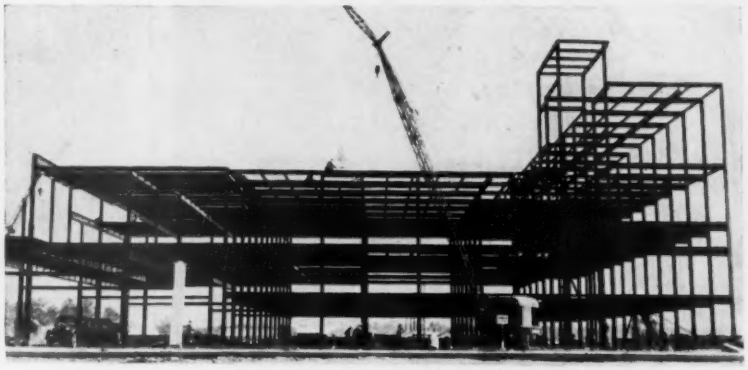

NEW NYLON PLANT of E. I. du Pont de Nemours & Co. at Chattanooga, Tenn., is going up. Built with 1,500 tons of fabricated steel from Ingalls Iron Works Co., Birmingham, Ala., the plant will be an important addition to the industrialized TVA area.

increase in population from 131,000,000 to 143,000,000.

To Speed Freight Service. Progress toward obviating current delays in the movement of textile freights from Southern mill points into the New York area was reported as a consequence of a meeting Oct. 9 of the Traffic Group of the Association of Cotton Textile Merchants of New York with officials of the Pennsylvania Railroad. Delays of from two to six weeks were reported in transit from Southern mills to New York customers, incurred largely at the transfer point from the Southern railroads to the Pennsylvania in Washington, D. C.

For Optimum Results in Seaming. A cooperative research program, undertaken to investigate the structure of seams used in common machine-sewed articles and to develop specific recommendations leading to attainment of optimum results, is being sponsored by American Thread Co., Reeves Bros., and Union Special Machine Co., representing thread, piece goods, and sewing machines, respectively.

Loom Making in Rhodesia. Believed to be the first looms mass-produced in Southern Africa are those now being manufactured by F. Issels & Son Ltd., Bulawayo, Rhodesia. The loom has been specially designed for African weaving conditions. It is a plain loom of the fixed reed type with outside cams, designed for 4-shafts, and weaving with a 72 in. reed space.

Web Fabrics Described. Maurice A. Goldman, president of Fiber Products Laboratories, Inc., Newark, N. J., spoke on "Web Fabrics and Cotton" before the American Association of Textile Technologists in New York Oct. 1. He discussed the major types of webs and laminates, and was optimistic on the volume of cotton which may ultimately be consumed in this field.

Non-Shrink Treatment for Wool. Further studies in Australia on the treatment of knitted woolen garments by the Freney-Lipson shrink-proofing process have been reported by J. L. Clay. He found that a non-felting finish on wool is produced by immersion for 10 minutes at 80°F. in the Freney-Lipson reagent prepared by dissolving 10 lb. of potassium hydroxide in 1 gal. (imperial) of water and adding this solution to 40 gal. of absolute alcohol containing 3.2 lb. of glycerine. The residual hydroxide in the wool is neutralized with a solution containing 4 lb. of concentrated sulphuric acid in 40 gal. of water. After a water rinse, the residual acid is neutralized with a solution of 11 lb. of sodium carbonate and 9 lb. of sodium bicarbonate in 100 gal. of water. After another water rinse, the handle of the treated wool is restored to normal in a solution containing 8 oz. of a cationic softening agent in 100 gal. of water.

Brochure on S. A. Salvage. A brochure in memory of Sir Samuel A. Salvage, father of the rayon industry in the United States, has been published by American Viscose Corp. Sir Samuel, who came to the United States fresh from an English school in 1893, died on July 10, 1946. It was at his suggestion, made to Courtauld & Co., the English textile firm, that American Viscose Corp. was organized and the first rayon plant in America was built in 1910 at Marcus Hook, Pa. Sir Samuel served actively with this company through the years, being president from 1925 to 1937. He continued as a director and consultant until his death.

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Spindle design permits using PICK (which gathers the fly and lint), 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning . . . PATENT APPLIED FOR. Steel housing for safety; special grease-sealed bearings. No lubrication required.

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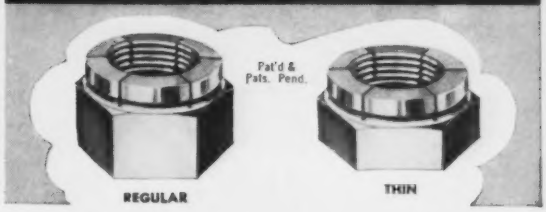
THE ACCEPTED STANDARD

FLEXLOC



SELF-LOCKING NUTS

Free samples of our "Flexloc" Self - Locking Nuts — "Draper" or American Hex Standards—are yours for the asking.

"Flexloc" packs maximum usefulness in minimum space because it is rugged, self-locking, compact —and is therefore becoming increasingly popular and this applies alike to U.S.S. and S.A.E. thread series.

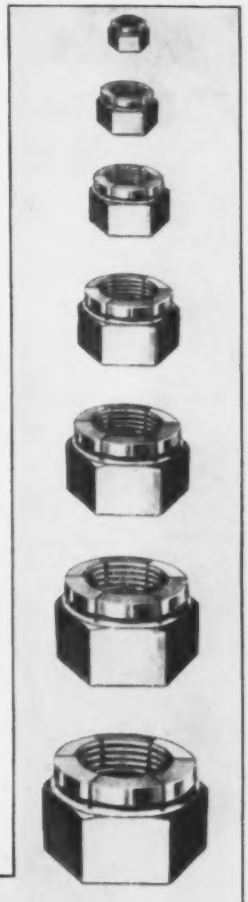
Every thread — including the locking threads — takes its share of the load. Covers a wide range of tolerances—from low #1 to high #3. Can be used over and over again without losing much of its locking ability.

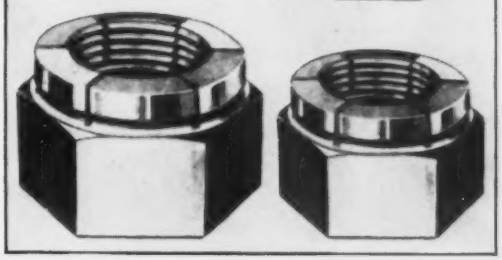
Being a "stop" nut, it stays locked in any position on a threaded member.

"Flexloc" Thin Nuts are especially popular, because their tensile is so high.

Sizes from #6 to 1" in diameter — MILLIONS IN USE. Can be made of all commercial metals such as Steel, Stainless Steel, Brass, Bronze, etc. Some of the largest mills have found them to cut maintenance radically.

Convince yourself with a few free samples





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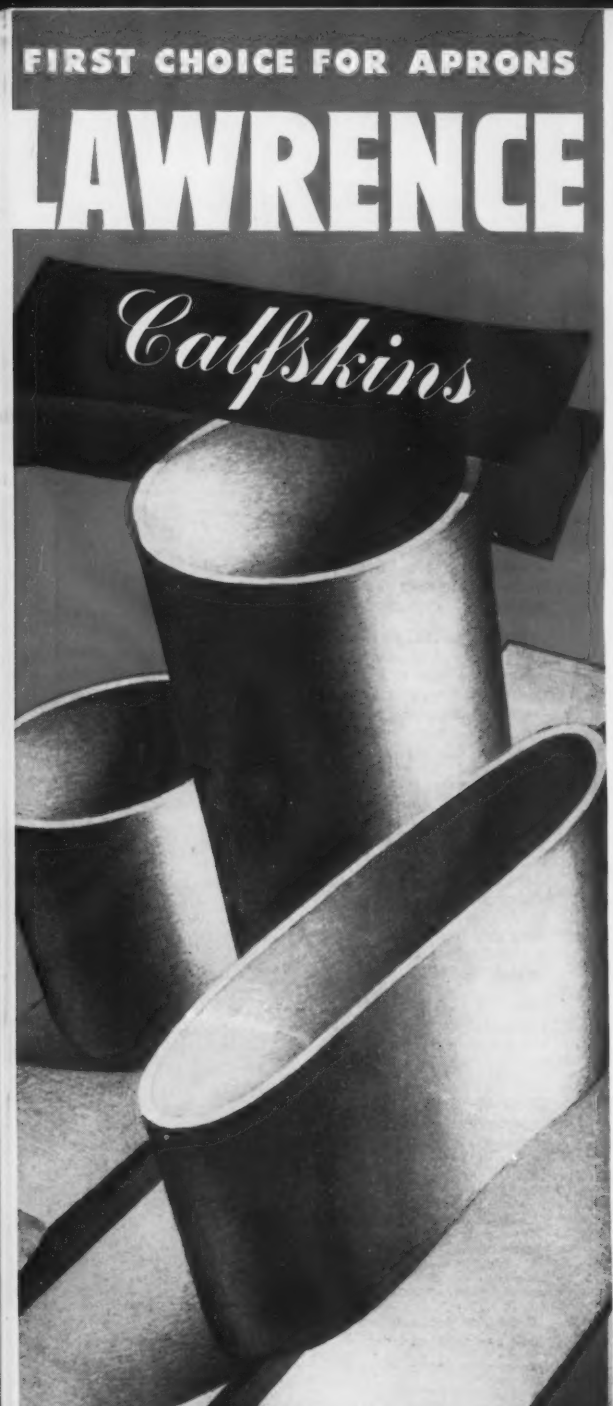


NEWS ABOUT *Suppliers*

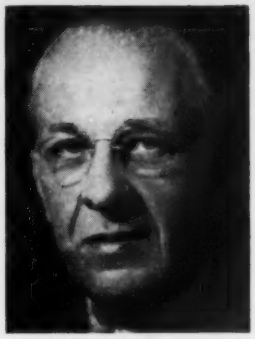
Universal Winding Co., Providence, R. I., has appointed C. Foster Harry as vice president in charge of manufacturing, a new position. He was formerly engineering field supervisor with Rath & Strong Inc., Boston.

Harris Research Laboratories, Washington, D. C., has made the following appointments to the staff: as research associates, Herman Bogaty, physical chemist, formerly with the Textile & Paper Div., of National Bureau of Standards, and Richard W. Mattson, mechanical engineer, formerly with the Engineering & Research Corp., Riverdale, Md.; as laboratory technician, Ruth Kirkwood, a graduate in chemistry of Mary Washington College, University of Virginia.

Locke Insulator Corp., Baltimore, Md., has dedicated a new ceramics research laboratory in honor of Fred M. Locke, founder of the company. The laboratory will be used not only for the improvement of electrical insulators, which have been the main products of the company for many years, but also for the development of new chemical and mechanical equipment for industrial plants. Already the company has developed yarn guides for the textile industry. Locke is an affiliate of General Electric Co.; and Charles E. Wilson, president of the latter, was the main speaker at the dedication ceremonies. Dr. James I. Pyle, director of G-E's Plastics Div. laboratory, Pittsfield, Mass., has been elected to the Locke directorate.

James Smith & Son, Worcester, Mass., will hereafter be known as James Smith & Son, Inc., with William B. Smith, president-treasurer, and William E. Christensen, secretary-clerk.

E. I. du Pont de Nemours & Co., Wilmington, Del., has appointed Edward C. Harrington, who has been in charge of advertising Du Pont yarns made by the viscose rayon process since 1929, to be manager of the newly-formed advertising section of the Rayon Dept. He will continue to have his headquarters at 350 Fifth Ave., New York, and will handle advertising of all Du Pont rayon and nylon yarns.



***JOHN O. HUNT** is president of Hunt Machine Works, Inc., Greenville, S. C., the new corporate name of Mountain City Foundry & Machine Co., 72-year old textile machinery manufacturing firm, and Hunt Loom Co., builders of weave room machinery and equipment. The two companies merged recently into a $2,000,000 corporation as previously reported.*

Monsanto Chemical Co., Textile Chemicals Dept., Boston., Mass., has appointed John W. Stewart to its New York sales and development staff with headquarters in Monsanto's new offices at 445 Park Ave., New York. Mr. Stewart, until recently New England representative of the Aqua-Sec Corp. of New York, has spent more than 16 years in the textile industry. Dr. E. S. Blake has been appointed assistant director of research for Monsanto's Merrimac Div. Dr. Reid G. Fordyce has been appointed sales development manager of Monsanto's Plastics Div. and Edmund S. Childs has been appointed assistant manager of the Sales Development Dept.

Synthron, Inc., Ashton, R. I., has appointed Fred C. Grant to its New England sales engineering staff. He had been associated with General Dyestuff Corp., for 15 yr. the

KOHORN EXECUTIVES MEET IN PARIS—While visiting Europe during one of his recent trips, Oscar Von Kohorn, president of Oscar Kohorn & Co., Ltd., New York, met in Paris with several of his European branch managers. Left to right are L. T. Edwards, London office; Oscar Von Kohorn; Dr. A. H. Lehner, Geneva, in charge of Continental operations; and Ernest Audrix, Paris.

last 8 yr. of which were devoted to technical sales representation throughout southern New England.

Quaker Chemical Products Corp., Conshohocken, Pa., has appointed Dr. Hugh H. Mosher as director of organic research. Dr. Mosher comes to Quaker after 14 yr. with the Onyx Oil & Chemical Co. where he was vice president in charge of textile research and development. He was at one time chief chemist for the U. S. Testing Co. and research chemist for Cheney Bros.

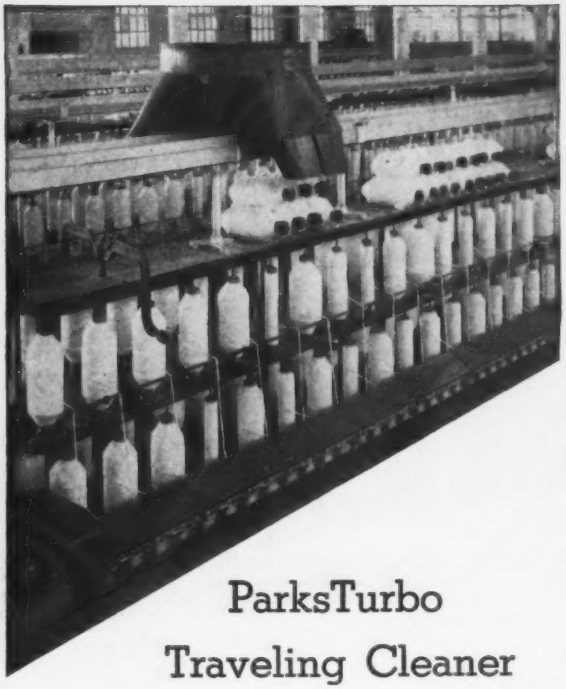
Union Special Machine Co., Chicago, has appointed Marion O. Moulton to be assistant manager of the company's St. Louis office under E. E. Gratsch. Mr. Moulton joined the Atlanta office of Union Special in 1933 where he became regular representative covering the Mississippi territory for the Atlanta office. Jamie Boyette moves from Greensboro, N. C. to Jackson, Miss. Replacing Mr. Boyette at Greensboro, will be W. D. (Bill) Harrod, who has been serving as a junior representative for the St. Louis office and working out of Dallas, Texas. Luther D. Cassell has transferred from Baltimore to Allentown, Pa., as representative.

Clarence L. Meyers & Co., Philadelphia, has appointed John H. Brine as sales representative in the Chicago and Mid-West areas to handle the line of Durene, mercerized and cotton yarn, and nylon seaming and looping thread. He will have his office at 222 West Adams St., Chicago, Ill. Mr. Brine was formerly president of Rollins Hosiery Mills, Des Moines, Iowa.

Clinton Industries, Clinton, Iowa, has appointed R. C. (Bob) Rau as southeastern manager with office at 325 W. U. Building, Atlanta, Ga. His duties will be supervision of sales of all Clinton products in the following states: Carolina, Georgia, Alabama, Tennessee, Mississippi, and Florida. Riley Owens will be Clinton's New York manager with office located at the Benham Co., 120 Wall St., New York, N. Y.

Stein, Hall & Co., Inc., New York, N. Y., has appointed William N. Kline, Jr., as manager of the company's branch office in Charlotte, N. C., as of Aug. 27, 1947. On graduation from Clemson College in 1929, he joined the Charlotte branch office as a chemist. In 1930, he was transferred to the sales staff of the same office and was appointed assistant manager in 1943. Since June 1, 1947, Mr. Kline has been directing the Charlotte office as acting manager.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., has organized a new subsidiary company in Switzerland. Named Honeywell A.G., the Swiss organization will handle sales and service of the complete line of Honeywell controls as well as all of the industrial recording and controlling devices made by Brown Instrument Co., wholly-owned Honeywell subsidiary located in Philadelphia, Pa. Charles B. Meech has been transferred to Zurich as manager of the subsidiary company. Leo deBruyn, a member of Honeywell's international division, will assist Meech. Other foreign subsidiaries operated by



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Traveling Cleaner

Its Mission . . .

Practically every textile operation was once done by hand. The mission of every piece of textile machinery you operate is to do something quicker, better, and at less cost than it was done before.

So then, the mission of

ParksTurbo Traveling Cleaners

is to keep textile machinery cleaner; to do it better; to do it at less cost. Operatives like it because it removes much of what is otherwise drudgery. More is accomplished with much less effort. Owners like it because it pays for itself so soon.

•

"A careful study has indicated that the Traveling Cleaner installation will pay for itself in two years. In addition, we are spinning better yarn."

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT SUPPLIERS

Honeywell are located in England, Sweden, Holland, Belgium, and Mexico.

Carrier Corp., Syracuse, N. Y., has opened its new industrial plant at Syracuse, built by the United States Navy in 1942. The purchase was made from WAA as a part of Carrier's $12,000,000 expansion program for the manufacture of air-conditioning and refrigeration equipment. The principal structure covers more than 13 acres under a single roof and it provides Carrier with an additional 600,000 sq. ft. of production space.

Hooker Electrochemical Co., Niagara Falls, N. Y., has transferred John M. Glaze to its New York sales office from the sales department of the home office in Niagara Falls. His territory will include portions of the metropolitan area in both New York and northern New Jersey.

Diamond Alkali Co., Pittsburgh, Pa., has leased 22,000 sq. ft. of space on the third floor of the Union Commerce Building, Cleveland, for the temporary housing of its administrative headquarters as the first step in its move to Cleveland. Permanent administrative headquarters of the company are to be located in Mayfield Heights, where the company is planning the construction of a $2,500,000 administration and research center provided Mayfield Heights residents approve required changes in the village zoning ordinances. Plans call for centering in Mayfield Heights not only the company's general office staff of about 150 people, most of whom will move from Pittsburgh, but also 200 engineering and research technicians, most of whom will be transferred from their present location in the company's Painesville plant.

Solvay Sales Corp. has appointed Neal M. Draper as manager of its St. Louis branch. Mr. Draper, who has been a salesman in the St. Louis territory for the last 12 yr., succeeds M. S. Johnson, who has been transferred to the Boston office. Mr. Elmer Seener has been appointed assistant branch manager at St. Louis.

Oakite Products, Inc., New York, is holding four regional technical-sales conferences throughout the country from

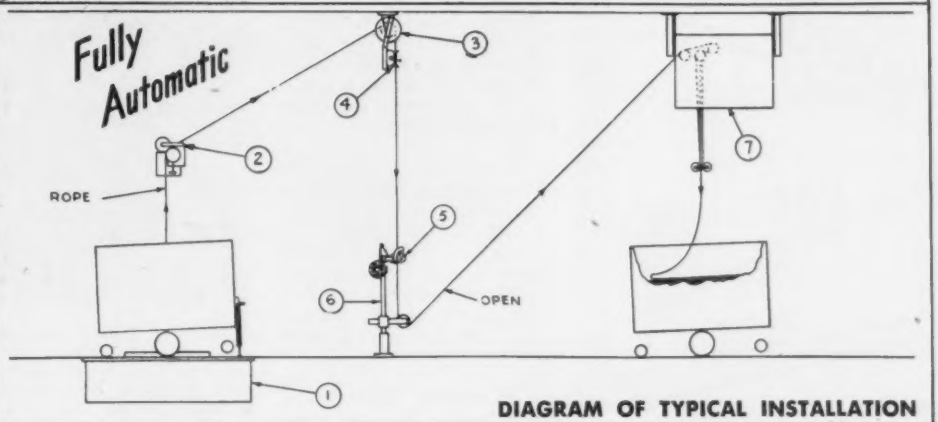
***WALTER E. TAYLOR** has joined Sandoz Chemical Works, Inc., New York, in its department for textile chemicals, where he is engaged in research and development work connected with new chemicals to be marketed to the textile industries. He was lately with American Viscose Corp., and prior to the war, with Pacific Print Works, Lawrence, Mass.*

September through November, 1947, which are featuring new products made by the company. The first was held Sept. 8 to 10, at Palmer House, Chicago, Ill.; members of the Central, Chicago, and Detroit divisions of the company participated. The second was held Sept. 15 to 17 at Coronado Hotel, St. Louis, Mo., including representatives of the Midwestern, Southern, and Southwestern divisions. The New York, New England, and Philadelphia divisions attended the third meeting at Hotel Commodore, New York, Oct. 6 to 8. St. Francis Hotel, San Francisco, Calif., is the scene of the fourth conference on Nov. 17 and 18 in which members of the North and South Pacific Coast divisions will participate.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed G. Edward Conn., Jr., as manager of the newly established branch office at York, Pa. MacGregor G. Jones, former resident representative at the Allis-Chalmers Harrisburg branch office, which has been discontinued, will assist Mr. Conn at York as sales representative.

Acme Steel Co., Chicago, Ill. —Hoffert Machine Co., Printers Supply Co., and Ajax Tool & Die Co. will be operated as the Hoffert Division of Acme Co., Racine, Wis. Acme Steel Co., Chicago, recently purchased the business. There will be no change in the present personnel at the Hoffert Div.

Mount Hope CLOTH OPENING EQUIPMENT



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INCLUDING

- Automatic Turntable Detwister (1)
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- Overhead Sheave (3)
- Detwister Switch (4)
- Swing Guider & Opener (5)
- Guider Stands (6)
- Plaiter (7)
- Draw Rolls
- Steel Pot Eyes

This fully automatic equipment opens cloth from the rope regardless of the amount of twist.

Mount Hope Devices Give:

1. COMPLETE SAFE FABRIC TREATMENT
2. MINIMUM MAINTENANCE
3. QUIET OPERATION
4. INCREASED PRODUCTION

Send for Bulletin SG-CO which gives full information, including prices.

MOUNT HOPE MACHINERY CO., Taunton, Mass., U. S. A.

REPRESENTATIVES — John H. Andresen, Inc., 138 Grand St., Paterson, N. J.; Ingalls Engineering Co., 1214 Union Trust Bldg., Providence, R. I.; Slaughter Machinery Co., Charlotte 1, N. C.; Sidney Springer, 1521 South Grand Ave., Los Angeles 15, California; W. J. Westaway Co., Ltd., Hamilton and Montreal 3, Canada.

A long awaited survey

FLAMEPROOFING TEXTILE FABRICS

Prepared by a Staff of Specialists under the Editorship of ROBERT W. LITTLE, Major, Q.M.C., under Research Project Q.M.C. #27 of the National Research Council, National Academy of Sciences.

Office of the Quartermaster General, Military Planning Division, Research and Development Branch

American Chemical Society
Monograph No. 104

This new volume on the flameproofing of textile fabrics is based on problems encountered during the war. It is divided into three general sections: (1) the fundamental mechanisms of the thermal degradation of cellulose and the chemical or physical phenomena of flameproofing; (2) the methods employed in the processing and evaluation of flameproofed fabrics; and (3) the various applications for flame-retarding treatments in the field of textile fabrics. This presentation familiarizes the reader with the types of retardents available, the function of these agents in the prevention of flaming and glowing, and the methods by which they are applied and evaluated. In addition to the results of the research project on "The Flameproofing of Army Clothing," this book includes a great deal of related information.

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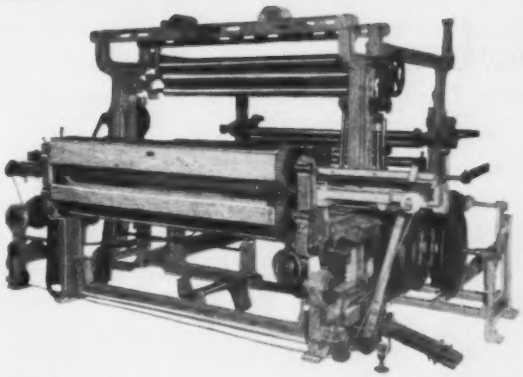
6 BRAND NEW, MODERN PILE FABRIC LOOMS with DOUBLE-SHUTTLE feature



Here is the last word in modern equipment for weaving such double pile fabrics as velvet, velours, plush, mohair, frieze, moquette, etc. Utilizes cotton, wool, silk and any other type yarn. Ready for immediate shipment from our factory . . . domestic or export. Prices and details on request.

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Yes—Solvay Liquid Chlorine gives you DEPENDABLE, LOW COST BLEACHING!

Solvay Liquid Chlorine Bleaching is the time-tested method that produces quality results *at the lowest cost.* The number of large textile businesses now using Solvay Liquid Chlorine is testimony of its performance! Specify quality . . . specify Solvay!

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New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

R. G. Hoffert will remain general manager, assisted by H. C. Hoffert. F. R. Grove, manager of the Stitching Wire Div., located in the general offices in Chicago, will remain in charge of all stitching wire and stitching machine sales.

Corn Products Sales Co., New York, has named Alexander MacFarlane as executive assistant to the general sales manager. Harold Francis has been appointed assistant general sales manager of the Eastern Div. Warren Winter succeeds Mr. Francis as manager of the Chicago office.

Philadelphia Quartz Co., Philadelphia, Pa., has added Albert C. Pierce to its sales staff to assume territorial duties in the Metropolitan New York area. Everett W. Turley, previously sales representative in the New York area, has been transferred to Chicago with headquarters at the company's sales office, 205 W. Wacker Drive.

Truscon Laboratories, Detroit, Mich., have appointed Austin F. Tomes as eastern branch manager. Truscon is a division of Devoe & Raynolds Co., Inc. Mr. Tomes was formerly affiliated with the A. C. Horn Div. of Sun Chemical Corp., as field sales manager.

O'Shea Engineering Co., Atlanta, Ga., has added K. P. (Ken) Knudsen to its staff to devote his time to control and air-distribution problems. Mr. Knudsen was formerly with Wheelco Instrument Co., Chicago. O'Shea represents in the Atlanta territory: American Engineering Co.; Buffalo Forge Co.; Buffalo Pumps, Inc.; and Dravo Corp.

Westinghouse Electric Corp., Pittsburgh, Pa., has named John E. Payne, formerly manager of industrial sales, to be manager of all industry sales departments. R. S. Kersh, who has been manager of the company's Houston, Texas, office since 1942, was named manager of industrial sales to succeed Mr. Payne.

Goodyear Tire & Rubber Co., Akron, Ohio, has appointed Louis W. Rasor as district sales manager of its Mechanical Goods Div. at Charlotte, N. C. The district embraces North and South Carolina and parts of Virginia and West Virginia. Mr. Rasor succeeds Richard G. Abbott, who becomes district manager at Los Angeles.

GORDON M. BOOTH has been appointed as textile representative in the South for the Diastafor Dept. Special Products Div., Standard Brands, Inc., New York, N. Y. Mr. Booth was previously employed by the Beattie Mfg. Co. He attended Philadelphia Textile Institute.

Nuodex Products Co., Inc., Elizabeth, N. J., has promoted George H. Moyer from Chicago district manager to sales manager of the North Central Region. Mr. Moyer's headquarters will remain at 600 South Michigan Ave. He will be responsible for direction of sales in the Chicago area as well as in the states in his territory which includes Illinois, Indiana, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Colorado, Nebraska, South Dakota, North Dakota, Montana and Wyoming. Nuodex has appointed Robert A. Peterson as sales representative in the Chicago District. He was for the last 2 yr. associated with Mineral Solvents Co., Chicago.

Pennsylvania Salt Mfg. Co., Philadelphia, held a three-day sales meeting for company representatives of the Laundry & Dry Cleaning Div. in the Southwest. Among those present were J. Stanley Hall, manager of sales; Paul C. Hurley, merchandising department; Hugh Temple, divisional manager.

Stephens-Adamson Mfg. Co., Aurora, Ill., has promoted A. W. Ostberg, formerly purchasing agent, to be assistant manager of the merchandising division. He will be in charge of the coordination of sales and production of the S-A line of standard box-car loaders, car pullers, winches, and speed reducers.

EMPIRE
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TEXTILE MILL
CRAYONS
EMPIRE MILL CRAYON
JUNIOR MILL CRAYON
Especially designed to meet the most exacting requirements of wool, cotton and rayon textile mills. A trial will convince you of the superior quality of this famous "Old Faithful" product.
Empire Textile Mill crayons are made in 18 clearly distinguishable colors and in large and junior size.
Write to Dept. TW-4 for Free chart showing actual colors.
THE AMERICAN CRAYON COMPANY
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for Better Belt Joints
To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.
use Clipper Belt Hooks
Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.
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The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!
No. 9 Portable Lacer
CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.
Clipper
BELT LACING
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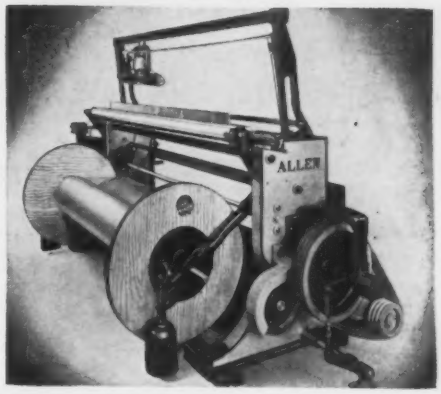
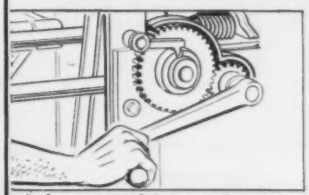
ALLEN Cotton Warper

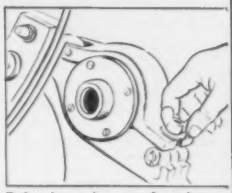
Model "C"

See how it doffs in 30 seconds





A few turns of beam doffer crank depresses ball bearing beam arm and lowers beam to floor.



Releasing wing nut frees beam by permitting ball bearing to slip off shaft ends.

1. Speeds up to 700 Y.p.m.
2. Electric stop motion
3. Beam Doffing Device. (see above)
4. Automatic lint cleaner for preventing collection of lint in combs and yarn
5. All adjustments made on outside of Warper
6. Adaptable for use with any make of creel.
7. Motor and V-belt drive with silent chain sprockets.
8. Efficient braking device.
9. Ball bearings throughout.

"Good Warps are made on good Beams."

★

Cotton and Rayon Beam Warpers

Ball Warping Machines

Narrow Fabric Warpers

Intermediate Dresser Stand for Woolen and Worsted Warp Yarns

Expansion Neck Reeds

All types of Expansion, Warper, Beamer and Slasher Combs

Replacement parts for Saco-Lowell and Entwistle Warpers

★

Allen KXR Cotton Warper Beams balanced for speed and for running on our Warpers to make a perfect Beam.

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Representatives in all Textile Localities and all Principal Countries of the World.

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Surveys — Reorganizations — New Plant Developments for Textile Bleaching, Dyeing, Printing and Finishing

● Building and Machinery Appraisals and Surveys (Reorganizations and new Developments) ● Mechanical and Operating Surveys—New Methods. (Reorganizations and New Developments) ● Order Scheduling and Planning ● Work Load Studies, Job Analysis and Job Evaluation, with Incentive Plans ● Standard Cost Installations ● Cost Control Methods

Labormeter—Burden-meter—Waste-meter

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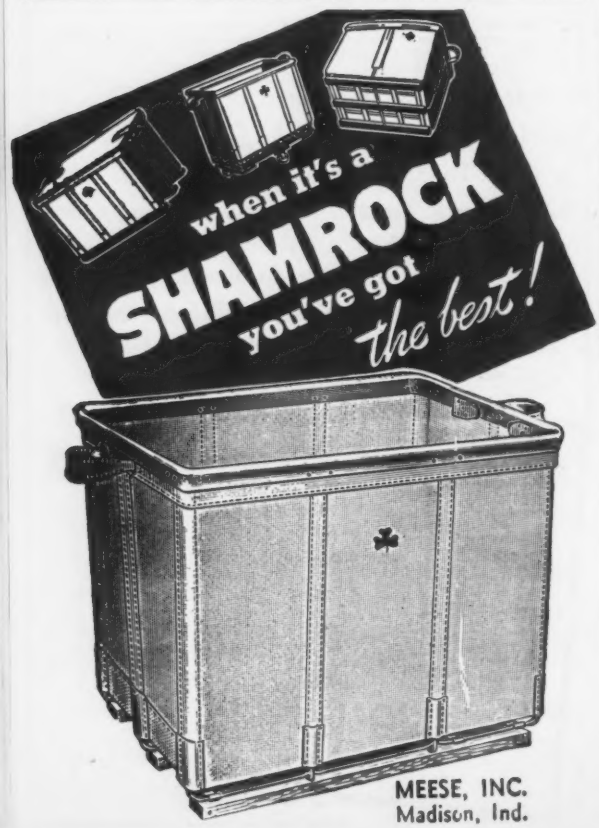
The following is a typical letter written by a client, indicating the range and quality of service rendered by the Barnes engineers:

"We have employed Barnes Textile Associates, Inc. regularly since 1928. During this period we have consulted them on an infinite variety of problems having to do with the efficient operation of a textile plant.

"They have installed our cost systems, labormeters, carried out time and operating studies, worked with us in labor conferences, installed quality controls, advised us with regard to merchandising, assisted us in the purchase of machinery, laid out one completely modern plant which is in operation today, employing 2,300 employees, and have submitted plans for an additional plant and modern dye house.

"We consider them the outstanding textile engineers in the country today, both with regard to ability and integrity, and, during our nineteen years of close contact with this firm, their services have been invaluable."



MEESE, INC.
Madison, Ind.

NEWS ABOUT *Mills*

Cotton Mill News

Anchor Rome Mills, Inc., Rome, Ga., for many years controlled by the Wellington Sears organization, and purchased by Jacob Ziskind late in 1945, has been sold by the latter to Floyd Jefferson Associates of Iselin-Jefferson Co., New York.

Beaumont Mfg. Co., Spartanburg, S. C., has started construction of new conveyor to connect mills No. 1 and No. 2. A second conveyor, which will use an enclosed car suspended from rail, is to be installed between spinning and weave rooms.

Belle-Vue Mfg. Co., Hillsboro, N. C., has a $400,000 improvement program under way, which will include a complete new steam plant, modern cotton-opening equipment, 40% addition to spinning equipment, improved lunch room and sanitary facilities, renovation of humidification system, improved lighting facilities, and introduction of latest-type card-stripping equipment. Mill anticipates 50% increase in production to result from this program.

Berkshire Fine Spinning Corp., North Adams, Mass, and Providence, R. I., is having plans prepared by Linwood A. Gardiner, Providence, for housing project at Albion, R. I. It is planning to build 25 housing units at cost of $225,000.

Candlewick Yarn & Mfg. Co., Dalton, Ga., plans construction of new two-story and basement yarn mill.

Erwin Cotton Mills Co., Durham, N. C., has approved plans for extensive improvements for mills and properties that will involve expenditure of several million dollars over the next three years. Program includes expansion and revamping of plant at Cooleemee, N. C.; air changing and humidifying equipment in all mill departments requiring it; improvement and modernization of company-owned houses; construction of new cotton offices at Cooleemee and Erwin, N. C.; and installation of new and improved machinery in various departments of the company's six mills and two finishing plants.

Essex Mills, Inc., Essex, Conn., newly organized, will take over production of a specialty line of braids and narrow fabrics which International Braid Co., has discontinued. Freeman W. Fraim, William Seidman, and August Breitschmid are principals.

Fulton Bag & Cotton Mills, Atlanta, Ga., plans construction of $215,000 warehouse unit.

Gluck Mills, Anderson, S. C., plans construction of one-story addition as a gymnasium for employees.

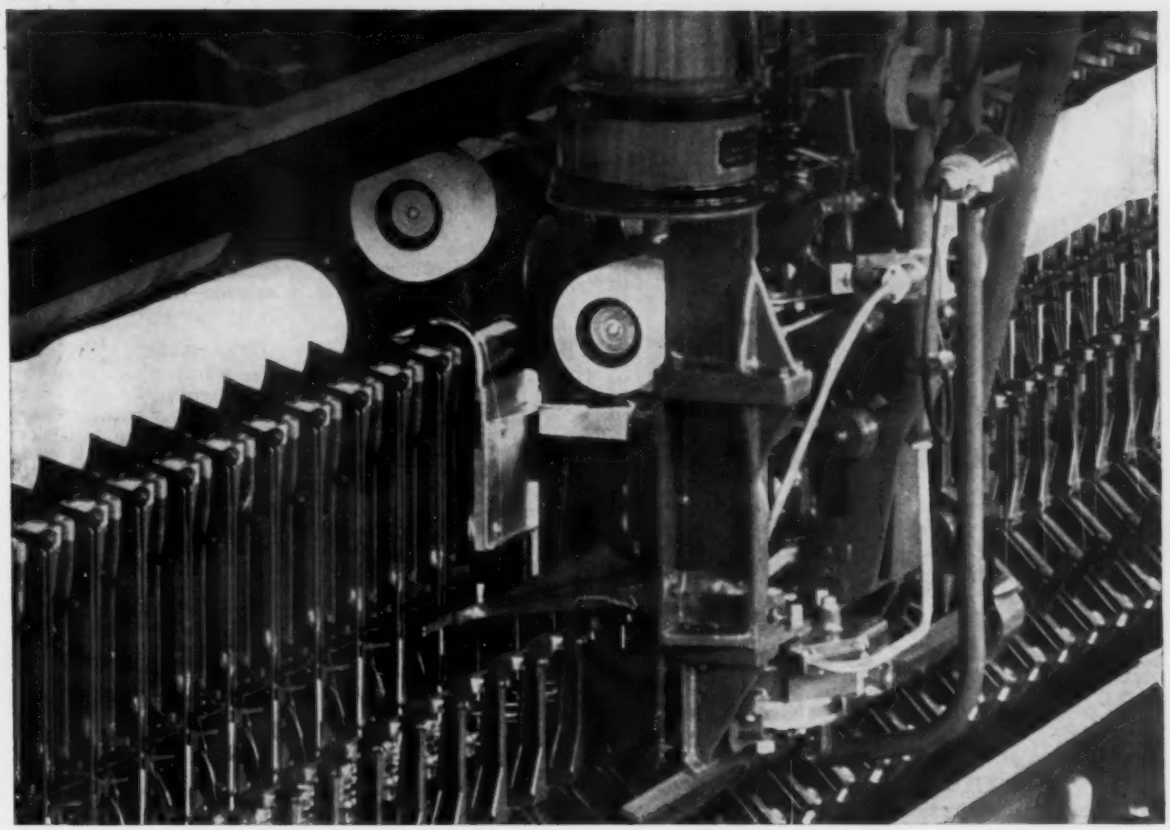
Howard Arthur Mfg. Co., Fall River, Mass., has repairs underway to its weaving mill. National Co., Fall River, has contract.

Hudson Narrow Fabric Mills, Easley, S. C., has begun expansion and modernization program that will include installation of looms and other equipment.

Hyde Park Mills, Covington, Tenn., is enlarging spinning department by 50%, and has recently installed package-dyeing equipment.

Ivey Weavers, Inc., Hickory, N. C., has let contract to Hickory Construction Co., Hickory, for one-story addition to cost about $130,000, with equipment.

Jackson, Miss.—Five cotton-textile plants in Mississippi, all for the R. D. Sanders interests, will be ready for occupancy in about 30 days. Plants at Charleston, Drew, Houlka, and Walnut, each costing an estimated $100,000 are nearly completed. At Hazlehurst, the $150,000 cotton-textile plant should be completed in about 30 days. Plants were constructed under the State's "balance agriculture with industry" program, whereby communities in which mills were to be



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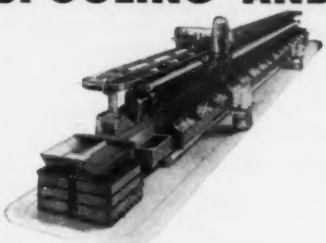
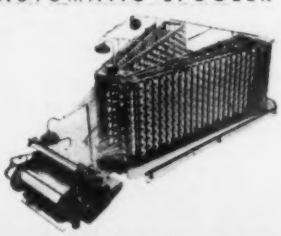


AUTOMATIC SPOOLER



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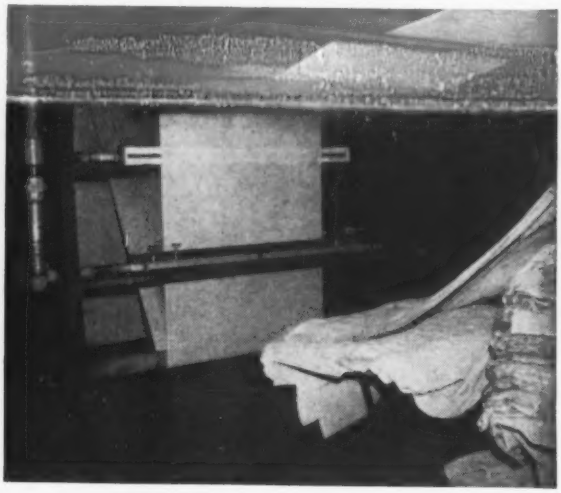

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located would issue bonds to finance construction of buildings.

Kings Mountain Narrow Fabrics Mills, Kings Mountain, N. C., is operating 21 looms on insulation tapes and bindings. James R. Riley is president and treasurer; Gordon R. Riley secretary.

Klumac Cotton Mills, Salisbury, N. C., has installed automatic spoolers.

Marshall Cotton Mills, Inc., Marshall, N. C., has obtained certificate of incorporation from North Carolina secretary of state, to card, spin, weave, etc. Principals are F. Graigner Pierce, Leon Salkind, and Harold Baum.

Muscogee Mfg. Co., Columbus, Ga., has let contract to Williams Construction Co., Columbus, for construction of two-story addition at cost of $45,000. Addition will provide space for new machinery, and permit enlargement of carding and drawing departments.

Natona Mills, division of Native Laces & Textiles Co., Wilkes-Barre, Pa., is building nine houses for employees. project will cost between $80,000 and $90,000.

New Braunfels Textile Mills, New Braunfels, Tex., has asked bids for one-story addition, to be equipped as a dyehouse. W. E. Simpson Co., San Antonio, Tex., is engineer.

Pee Dee Mfg. Co., Mill No. 2, Rockingham, N. C., plans to install new equipment and make improvements which will result in addition of 100 workers. Noah L. Gibson will be mill superintendent.

Philipsdale Lace Works, East Providence, R. I., has foundations in for plant addition. J. L. Marshall & Sons, Pawtucket, has contract.

Proximity Mfg. Co., Greensboro, N. C., will award contract soon for two-story office building to cost about $40,000.

Sparton Mill Corp., Spartanburg, S. C., has bought motor pool and half a dozen larger buildings of what was formerly Camp Croft. Immediate plans of company have not been announced.

Tape-Craft, Inc., Anniston, Ala., plans expansion program costing $80,000. The program will include new building, machinery, and looms. Ruby Kemo is president.

Tokyo, Japan—The 2,800,000 cotton spindles now installed in Japan are expected to be increased to 3,000,000 by end of this year and to 3,600,000 by September, 1948, according to a survey made by Japanese Government.

West Boylston Mfg. Co., Montgomery, Ala., is completing conversion of mill for yarn manufacture. Plant heretofore has specialized in cotton fabrics and cords for automobile tires.

Wool Mill News

Associated Spinners, Inc., New York, has purchased the No. 4 Unit of the Industrial Factory Project in Gastonia, N. C. Worsted yarns will be spun on the American system, utilizing machinery from Whitin Machine Works. Officials of the company include, Milton E. Tager, president; Sidney Tager, vice president; and Ralph Tager, secretary and treasurer. Negotiations leading to the establishment of this plant in Gastonia were handled by the Gastonia Industrial Diversification Commission.

Brampton Woolen Co., Newport, N. H., has constructed addition to plant to expand its facilities.

Camden Textile Co., Camden, Maine, is replacing most of its old broadlooms with automatics.

Coosa Valley Mills, Inc., Talladega, Ala., is expecting shipments of machinery from Whitin Machine Works, with production scheduled for late fall. Mills will produce worsted yarns on American system.

Deltox Rug Co., Oshkosh, Wis., has let contract to Ben B. Ganther Co., Oshkosh, for one-story addition, 84x188 ft.

Felt & Textiles of Canada, Victoria, B. C., expects to be in production by next spring on manufacture of Feltex and other woolen floor coverings. Dye house is fitted out with dye vats, piece-dryer, 22-ft. squeeze rolls, and fulling mills. Philip Fleming is managing director.

Livingston Worsted Mills, Holyoke, Mass., will take over

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space occupied by Cornwall Mills, Inc., as soon as the latter firm moves.

Van Durand Combing Co., Inc., North Smithfield, R. I., has been chartered to operate wool-combing mill. F. D. Vandeputte, North Smithfield, is head.

Wanskuck Co., Providence, R. I., has taken out permit for extensions and improvements in office building at mill.

Rayon & Silk Mill News

Andover Weaving Co., Andover, Mass., has recently been opened by Gordon M. Gaunt. He will do commission weaving.

Burlington Mills Corp., New York, has acquired certain assets and the key personnel of Duplex Fabrics Corp., New York. Duplex will terminate its activities with completion of third quarter deliveries and Burlington will complete contracts for future periods, including the fourth quarter of 1947. Duplex has had many years experience in distributing finished dress goods.

Burlington Mills Corp., Greensboro, N. C., has sold plant and equipment of Everlastik Corp., Chelsea, Mass., to group of men in narrow fabrics. Dave Casty and Ben Fanouil are principals. Purchase price was not divulged. Operations will continue at Chelsea under the new management, which will manufacture most of the same lines of goods as previously.

Carolina Process Co., formerly located at Mount Holly, N. C., has moved into new quarters in Charlotte, N. C. Concern is housed in modern, two-story building with spinning machinery on first floor and company offices on second. R. C. Anderson is president and treasurer, and Grace Anderson, secretary.

Cascade Rayon Mills, Mooresville, N. C., has begun work on addition which is expected to cost about $22,000, and which will add about 3,000 sq.ft. of floor space to throwing department.

Celanese Corp. of America, New York, has installed new industrial research laboratory at Summit, N. J. Wigton-Abbott Corp. was engineer and contractor.

Colonial Mills, Inc., has selected Aberdeen, N. C., as site for new spun-rayon plant which will have 19,200 spindles and 192 wide looms. Plant will be known as Robbins Cloth Mills, Inc., Aberdeen Div. Production is scheduled for middle of 1948.

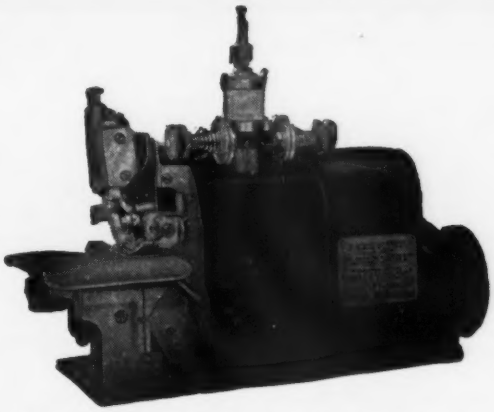
Concordia-Gallia Corp., New York, is in the process of liquidating its business. Concordia-Gallia has been engaged in throwing synthetic yarns, weaving narrow fabrics, and converting rayon fabrics. The assets of the velvet, millinery fabrics, narrow fabrics, and throwing divisions of the Concordia-Gallia have been purchased by Martin Fabrics Corp., a subsidiary of the J. B. Martin Co., Norwich, Conn. Executive and selling offices will remain at 48 West 38th St., New York. Andre Charbin, president of J. B. Martin Co., is president of Martin Fabrics Corp.; George W. Ewald, executive vice president of Concordia-Gallia, is executive vice president and treasurer of the new corporation. Some of the assets of the converting section of Concordia-Gallia have been sold to Burlington Mills, and William G. Ewald, Fred Jorss, Mac Sternberg, George Stettheimer, and other key personnel of the converting department have been employed by Burlington Mills, and will continue to merchandise finished rayon fabrics as the Concordia-Gallia Div. of Burlington Mills. This Burlington division will be conducted from the former offices and show rooms of Concordia-Gallia at 1400 Broadway, New York.

Curtis Corp., Providence, R. I., has been organized to operate mill for manufacture of rayon fabrics. Fred B. Perkins, Barrington, R. I., is principal incorporator and representative.

Edson, Inc., Chicago, Ill., plans new plant at Kedzie Ave. and 28th St., with 30,000 sq. ft. floor space. Cost over $100,000 with equipment.

Gold Tex Fabrics, Rock Hill, S. C., plans installation of additional new machinery and equipment.

New England Plastic Fabrics, Inc., New Haven, Conn., has been established at 868 Grand Ave., and has the following officers: President, Albert Roos; vice president and treas-



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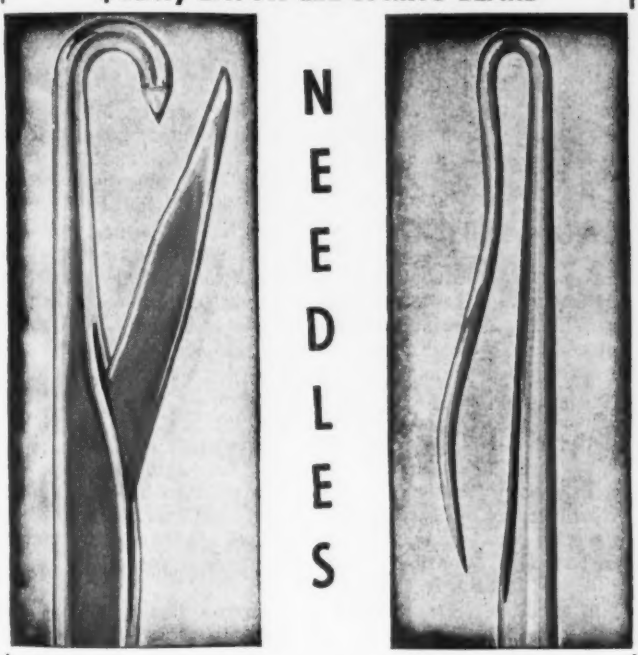

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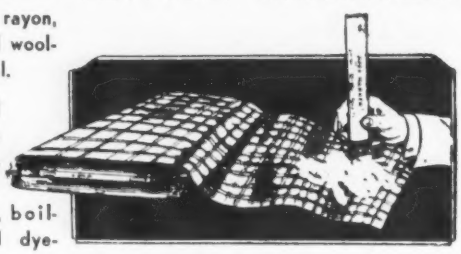

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urer, Paul Marx; secretary, Hildegrad Roos.

North American Rayon Corp., Elizabethton, Tenn., is engaged in a rehabilitation and expansion program estimated to cost $6,500,000. Units I and II, making textile yarns, are being modernized to incorporate the latest technical know-how the company possesses. At the same time, 6,000,000 lb. additional viscose capacity are being added, bringing the total production capacity up to 40,000,000 lb.

Protection Products Co., 615 N. Aberdeen Ave., Chicago, Ill., has purchased two-story plant containing 50,000 sq. ft. of floor space, at 2637 W. Polk St., and will occupy for new plant. Property previously was used by Textile Mills Co., which will remove to large new mill at 2762 N. Clyburn Ave.

Uniform Fabrics Corp., Philadelphia, Pa., has been granted charter to manufacture and deal in textiles, textile products, and apparel accessories. Incorporators are Sidney Stern, Bert W. Levy, and Helen Rawa, all of Philadelphia.

Verney Corp., Boston, Mass., has inaugurated $4,000,000 plant and equipment modernization program to bring all its plants up to date. New finishing plant at Peterborough, N. H., will receive about $1,000,000; $1,000,000 will go for machinery where needed in organization. Program will be spread over three-year period.

Knitting Mill News

Charles H. Bacon Hosiery Mill, Loudon, Tenn., will install 30 new machines in mill, in addition to auxiliary equipment for pre-boarding, looping, seaming, and inspection. New seamless machines will be installed at Lenoir City mill.

Belvedere Hosiery Co., Charlotte, N. C., plans installation of additional Karl Lieberknecht knitting machines. Plant was recently put into operation.

Broadalbin Knitting Co., Inc., Broadalbin, N. Y., has completed modernization program at cost of more than $500,000. New machinery has been installed in picker room; card room has been equipped with Peralta rolls, Scotch feeds, tape condensers, and vacuum stripping. Spinning department has been converted to newest type ring spinning. New knitting machinery has been added, and new machinery has been installed in the dye house and finishing departments.

William Carter Co., Barnesville, Ga., has completed $250,000 remodeling project. Project comprises maintenance shop, boiler house, warehouse, loading platform, trucking area, two-story 40-ft. addition to knitting and finishing departments, office, and coal silo. Improvements are also being made in drying building and bleach house.

Ellen-E Hosiery Co., Milwaukee, Wis., has postponed erection of proposed new mill. Walter Pollotz, Milwaukee, is architect.

Granite Hosiery Mill, Mount Airy, N. C., has purchased industrial building formerly occupied by No. 2 plant of Renfro Hosiery Mill, Inc., and will occupy quarters as soon as remodeling is completed.

Hodges Knitting Mills, LaFayette, Ga., has been leased by Empire Tufting Co., branch of LaRose Bedspread Co., Dalton, Ga.

Jantzen Knitting Mills, Portland, Ore., has expanded sweater capacity by addition of new spinning room and 11 new jacquard-knitting machines. All cutting and sewing operations have been moved to newly established plant in Vancouver, Wash., where Ed Klinchworth, former personnel director of Portland branch, is general manager. The buildings and 9½ acres were bought from the War Surplus Administration.

Lynbrook Knitting Mills, Inc., New York, N. Y., has been organized to operate mill. I. Itzkowitz, 463 E. 178th St., Bronx, is attorney and representative.

Maryon Hosiery Mill, Carrollton, Ga., is expanding facilities to increase production to more than 2,500,000 pr. of children's hose per year. New equipment will double present production and require addi-

Famous Firsts

THE FIRST PRACTICAL FIRE ENGINE in America was designed and built by A. B. Latta in 1853. Affectionately called the "Uncle Joe Ross," this engine weighed 5 tons, took 9 months to build and cost about $10,000. It was drawn by 4 horses with the help of its own power, and had a firebox and boiler similar to that of a locomotive. It threw from 1 to 6 streams of water and could throw a 1¾ inch stream a distance of 240 feet.

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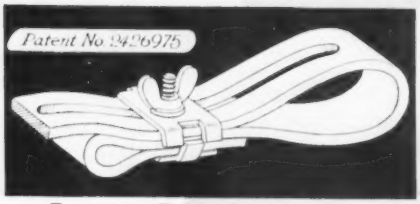

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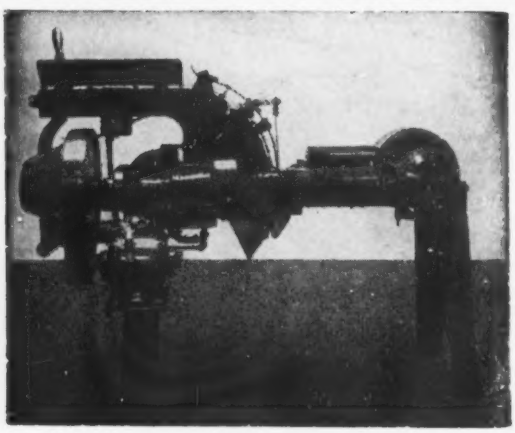

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tional working force. Ted Hirsch is president.

Mauney Hosiery Mills, Inc., Kings Mountain, N. C., has been formed with authorized capital of $500,000 to own and operate hosiery mills. W. K. Mauney, Jr., Carl F. Mauney, and George H. Mauney, all of Kings Mountain, are incorporators.

Renfro Hosiery Mill, Inc., Mount Airy, N. C., has completed two new additions to main plant. One of the buildings is 70x50 ft., four stories; and the other is 400x80 ft., two stories. Additions almost double previous floor space. Plant No. 2, formerly located on South Main St., is now housed in one of new additions near main plant. Building which it was occupying has been purchased by Granite Hosiery Mills, which will move to new site as soon as renovations are completed.

Rogers Hosiery Mill, Inc., Hendersonville, N. C., has been formed with capital stock of $50,000 to manufacture hosiery. Incorporators are Harry L. Rogers, Verona Rogers, and Charles E. Rogers, all of Hendersonville.

Skyland Textile Co., North Wilkesboro, N. C., will construct new plant. Limited production is expected to begin within 30 days.

Sytz Fabrics, Inc., Dyersburg, Tenn., recently organized to manufacture knit goods, has begun erection of new mill, comprising three 1-story buildings, to cost over $80,000, with equipment. Clayton Construction Co., Dyersburg, is contractor.

Standard Knitting Mills, Knoxville, Tenn., has received city building permit for $105,000, 2-story, reinforced-concrete addition.

Taylor Hosiery Mill, Columbus, Ga., has been formed to manufacture men's hosiery. Plans call for production of 300 doz. pr. per day. Harvey Taylor is president.

Dyeing & Finishing Plant News

California Finishing Co., Santa Clara, Calif., is not expected to start production until first of the year because of slow deliveries of certain types of equipment. It was previously announced that company would be in production by Oct. 15.

Hanes Dyeing & Finishing Co., Winston-Salem, N. C., has obtained building permit for construction of brick boiler-room at its textile plant on Chatham Road.

Lykens Hosiery Mills, Inc., Lykens, Pa., has recently opened its own dyeing plant.

Springs Cotton Mills will open its new bleachery at Grace's Station on Catawba River in May, 1948. Actual work will start in September, 1948. Bleachery project will represent a total cost of $15,000,000.

Whitney Plant, Spartanburg, S. C., unit of Spindale Finishing Co., is planning to move to Camp Croft, S. C., to a $100,000 location acquired from WAA by Spartanburg County Foundation. Frank Rigers is resident manager of plant.

Miscellaneous Mill News

Acton Vale Silk Mills, Ltd., Acton Vale, Que., has placed in operation its new $250,000 flax-spinning plant designed for production of dry-spun tow yarns. Directors are considering installation of looms for the manufacture of canvas and similar goods.

Deltox Rug Co., Oshkosh, Wis., has let contract to Ben B. Ganther Co., Oshkosh, for erection of a one-story addition, 84 x 188 ft.

Meredith Linen Mills, Inc., Meredith, N. H., has started experimenting with production of new rayon product and has added second shift. William A. Keeter is manager of corporation.

Textile Mills Co., Chicago, Ill., manufacturers of textile and plastic household utilities, will move to new $1,000,000 finishing plant in Chicago. Kurt Goldsmith is president.

War Assets Administration, Cincinnati, Ohio, is offering hemp mill near Winchester, Ky., for sale. Property was designed for war-time processing of hemp.

Style 20

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Style P. R. - 19

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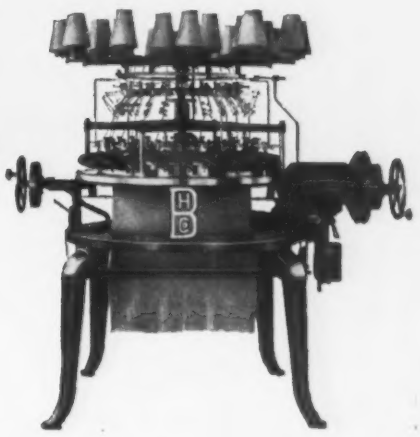

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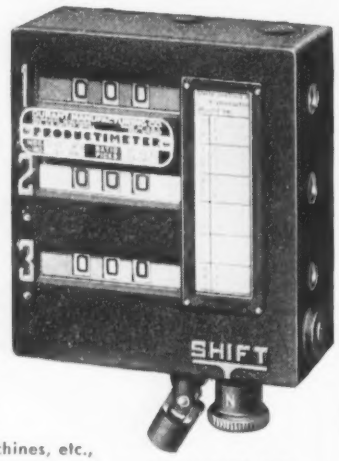

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Palmer, Massachusetts

NEWS ABOUT Men

Richard N. Tandler is new president of LaFrance Industries, LaFrance, S. C., succeeding **Paolino Gerli**, resigned.

Raymond A. Lander has been elected president of Vogt Mfg. Co., Rochester, N. Y., producers of automobile textiles, succeeding Albert E. Vogt, who died recently. **Louis S. Folkes, Jr.**, has been elected vice president and treasurer, and **Raymond A. Lander, Jr.**, secretary.

Marland C. Hobbs, executive vice president of William Whitman Co., Inc., New York, has resigned his position with the company. Pending appointment of a successor to Mr. Hobbs, manufacturing operations at the mills will continue in charge of **J. Sime Mercer**, manufacturing agent of the company's Arlington Mills Div. and **Ernest C. Hay**, manufacturing agent of the company's Monomac Spinning Mill Div.

David Meriwether has been elected vice president and general manager of Rockland Bleach & Dye Works, Baltimore, Md. He was formerly treasurer and general manager of Tennessee Textile Co., Chattanooga, Tenn.

John D. Bowen has resigned as vice president and treasurer of Stead & Miller Co., Concord, N. C., and will be succeeded as treasurer by **Theodore R. Schramm. William D. Schramm** has been reappointed president.

Spencer Greason, Jr., is now associated with Old Bennington Weavers, Inc., New York, N. Y., as vice president and director in charge of sales.

Frank J. McMahon has been elected vice president in charge of woolen division of Oberman & Co., New York, N. Y.

George H. Taylor has been elected member of board of directors of Colonial Mills, Inc., New York, N. Y.

Allen G. Thompson has joined the Wrenn Hosiery Co., Thomasville, N. C., as general merchandise manager and executive vice president of its affiliate Tu-Gees Hosiery Co., High Point, N. C.

G. Lawson Ivie has been appointed general sales manager of Fieldcrest Mills, New York, N. Y. He was for 20 years connected with the mills in North Carolina, coming up through the organization to assistant mill manager, mill manager, then manager of several mills. Since 1936 he has been in New York in the merchandise and sales organization. Mr. Ivie succeeds **R. T. Graham**, who is moving to Chicago to become manager of Fieldcrest Mills Chicago offices for domestics, home furnishings, and Karastan rugs.

William H. Burroughs, former Burlington Mills Corp. official, has been appointed controller of the Reeves Bros., New York.

Thomas L. Rusk, Jr., has been transferred from the educational branch of the American Viscose Corp.'s textile research department, Marcus Hook, Pa., to the department's weaving division. Mr. Rusk was earlier associated with the Pawtucket Dyeing & Bleaching Co. and the Boston Duck Co.

John H. Edwards has been transferred from the weaving division of the textile research department American Viscose Corp., Marcus Hook, Pa., to Meadville, Pa. He will become assistant to **P. W. Brown**, resident plant representative of the department.

Oliver G. Edwards, formerly director of research for Avondale Mills, Sylacauge, Ala., has been appointed to staff of Industrial Research Institute of University of Chattanooga, Chattanooga, Tenn. For the last year he has been in Germany as member of Quadripartite Commission on Textiles.

Olin C. Shedd, group manager of four Burlington Mills

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That *gives* lasting beauty;

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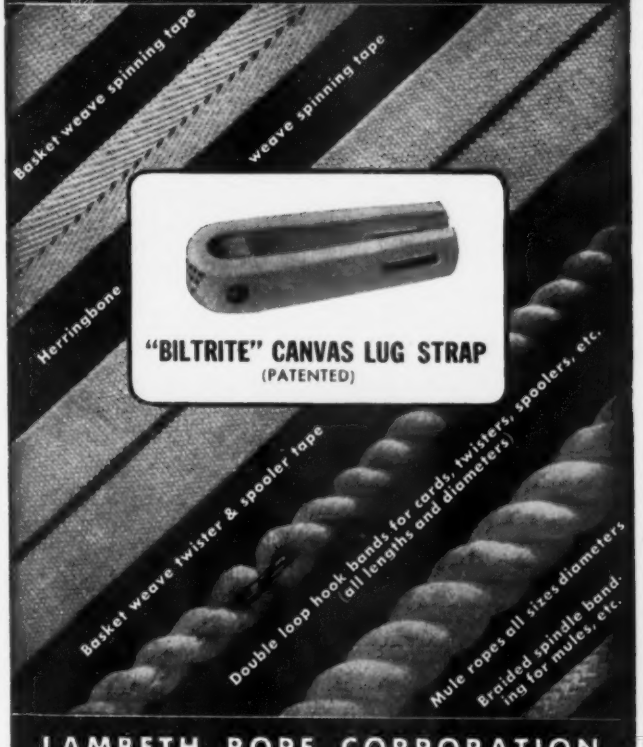
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GREENVILLE, SOUTH CAROLINA

NEWS ABOUT MEN

plants in Fayetteville, N. C., area, has taken over additional responsibilities of management of Oxford Mills, Oxford, N. C., which was purchased by Burlington Mills in October, 1946. **D. F. Lanier** is local superintendent of Oxford plant.

Gustav Zahradnik, general manager of the nationalized woolen and worsted mill, Cheb, Czechoslovakia, is now in the United States and is making his headquarters at Werner Textile Consultants, New York, N. Y. He will investigate new manufacturing processes, and plans to visit machinery firms and woolen and worsted mills in New England and the South.

Earl Clifford is now general manager at Sumter Textile Mills, Sumter, S. C. He resigned as manager of Uncas Finishing Corp., Mechanicsville, Conn., to accept new position.

Edward H. Cloutier will head knitting department of the New Bedford Textile Institute, New Bedford, Mass. He will supervise modernization and rehabilitation of the department.

A. Neuwelt has been appointed manager of felt division of Great West Felt Co., Ltd., Elmira, Ont. He was formerly purchasing agent of textile division of Dominion Rubber Co., Kitchener, Ont.

G. C. Truslow has resigned as superintendent of the finishing mill and bleacher of Fieldcrest Mills, Spray, N. C., and has been succeeded by **Frank T. Suttenfield. Hugh T. Bundy** has been promoted to assistant manager of the blanket, sheeting, and finishing mills, succeeding **John Perry Powell,** resigned.

N. Carey Hayward has been elected treasurer of Verney Corp., Boston, Mass., and **Harry Baldwin** has been elected vice president in charge of production.

E. W. Dunham, assistant secretary of Erwin Cotton Mills Co., Durham, N. C., has been elected secretary of company to succeed the late E. G. McIver.

Fred Allen, of Hamilton, Ontario, has been named general manager of Bloom Mills, Inc., Gastonia, N. C.

C. E. Aulis, of Wakefield, R. I., is now general manager at Gordon Woolen Mill, Newport, N. H.

Carl A. Johnson, general superintendent of Lonsdale Co., has resigned to become general manager of Fisher Co., Inc., Fisherville, Mass.

C. W. Cashion has resigned as superintendent of Flint Mfg. Co., Gastonia, N. C., and has accepted similar position with A. M. Smyre Mfg. Co., Gastonia.

William C. Harmon has taken charge of finishing at Neponset Woolen Mills, Canton, Mass.

Thomas J. Hetherman is now overseer of dyeing at American Woolen Co., Norwich Mills, Norwich, Conn., succeeding **J. A. McKay.**

Frank L. Hill has been named assistant to superintendent of Wennonah Cotton Mills Co., Lexington, N. C.

Alfred Besarcovitch, of West Warwick, R. I., is now assistant superintendent at Harodite Finishing Co., North Dighton, Mass.

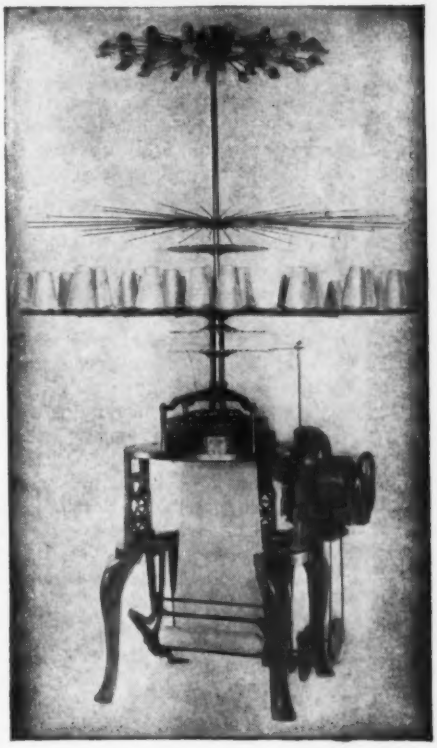
Cyril Boden of Manchester, N. H., is now overseer of worsted twisting, reeling, and winding at Lewis, Ltd., Truro, N. S., Canada.

Mitchell A. Allen, former night overseer of Beaumont Mfg. Co., Spartanburg, S. C., has been appointed overseer of spinning department. **P. L. Piercy,** former overseer of twisting, has been named to succeed Mr. Allen. **J. L. Adams** is plant superintendent.

L. Earl Bagwell, Jr., formerly head of spinning department of Beaumont Mfg. Co., Spartanburg, S. C., has been promoted to assistant superintendent. He succeeds **Walter H. Gosnell,** who resigned to become superintendent of Saxon Mills, Spartanburg.

Albert Coates has been appointed foreman of dyeing at Sawyer, Regan Co., Dalton, Mass., following resignation of **John T. Ayers.**

G. P. Demers has resigned as overseer of weaving at Gros-



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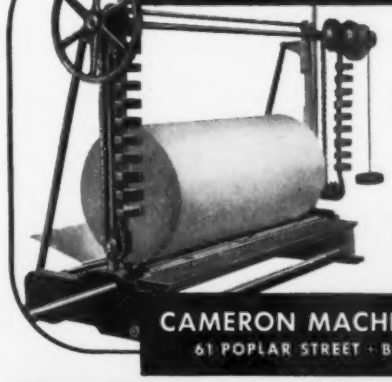

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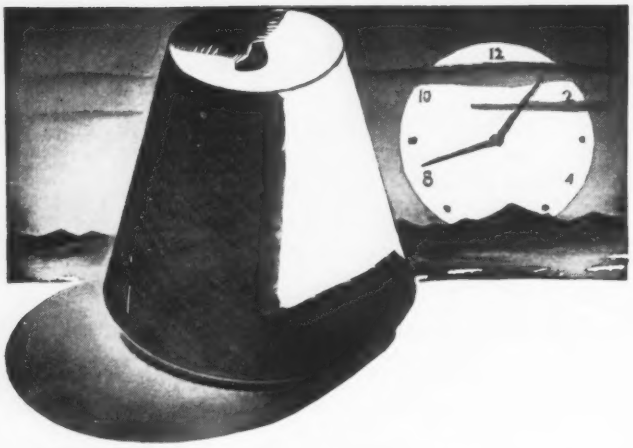

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venordale Co., Grosvenordale, Conn.

G. Champagne has become overseer of carding at Gordon Woolen Mill, Newport, N. H.

George H. Asquith is now overseer of carding at Crown Mills, Marcellus, N. Y. He succeeds **J. Largent.**

Joseph P. Scanlon, overseer of finishing, has left Yorkshire Worsted Mills, Lenni Mills, Pa.

Everett Symes has resigned as superintendent at Atlantic Woolen Mills, Atlanta, Ga., to accept post as assistant resident manager of Webster Mills of American Woolen Co., Webster, Mass.

Emerson Vanasse has resigned as overseer of finishing at Gibson Woolen Mills, Tilton, N. H., to accept post of superintendent at Gaunt Worsted Mills, West Warwick, R. I.

Charles J. White, Jr., recently resigned from Callaway Mills, has become associated with Dana M. Martin Co., Inc., Akron, Ohio, to help supervise the cotton-yarn and industrial - gray - goods departments.

P. Whiteoak, formerly with Ames Worsted Co., Southbridge, Mass., is now superintendent of worsted yarn department at Montrose Worsted Mills, Granby, Quebec.

Francis B. Wobecky is new overseer of vat dyeing at Arkwright Finishing Co., Fall River, Mass.

Reuben J. Jennings, assistant superintendent of Lanett unit of West Point Mfg. Co., Lanett, Ala., has become superintendent of Equinox Mill, Anderson, S. C.

Halsey B. Leavitt, Jr., has resigned as superintendent of woolen mill of Fieldcrest Mills, Leaksville, N. C., to become superintendent of Atlanta Woolen Mill, Atlanta, Ga. **Walter B. Parker,** superintendent of Faulkner & Colony Mfg. Co., Keene, N. H., succeeds.

Sidney B. Loeser has been appointed assistant to contract carpet manager, **John Gallaher,** at James Lees & Sons Co., Glasgow, Va.

E. B. Marsan, supervisor of stitching at Textron, Inc., plant, Easthampton, Mass., has been promoted to superintendent of Textron's new sewing plant at Batesburg, S. C.

E. W. Leahy, overseer of carding, has left Weil Bros., Newburgh, N. Y.

E. A. Matthews is now overseer of finishing at Brampton Woolen Co., Newport, N. H.

W. E. Ellenburg is the new overseer of carding at Saxon Cotton Mills, Spartanburg, S. C. He formerly held a similar position at Beaumont Mfg. Co., Spartansburg.

John H. Moore is now overseer of finishing at Champlain Mills of American Woolen Co., Winooski, Vt.

J. L. Jordon has become overseer of carding at Beaumont Mfg. Co., Spartanburg, S. C. He succeeds **W. E. Ellenburg,** who resigned to accept another post with Saxon Mills.

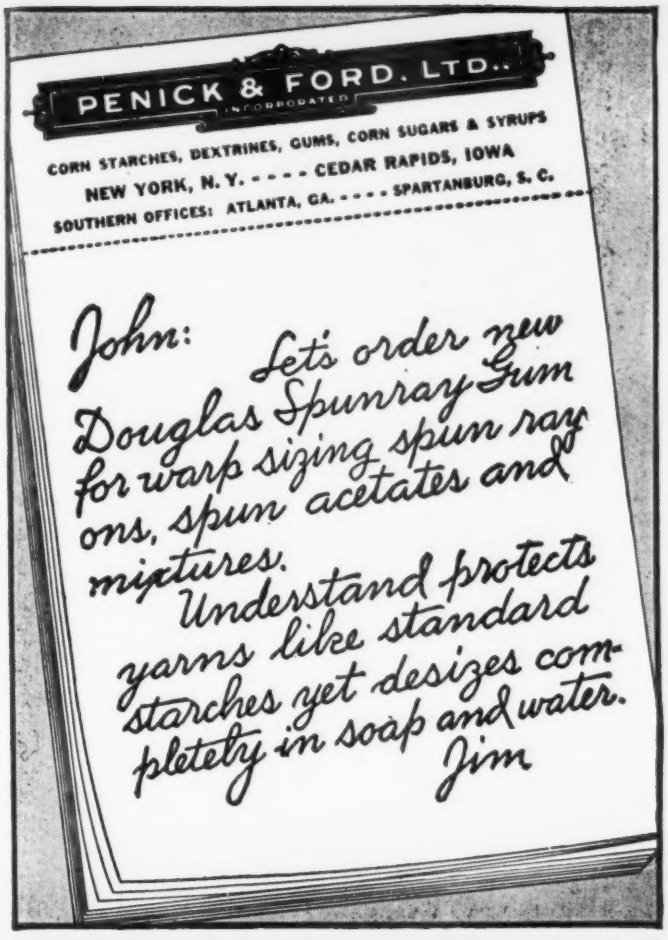
Alfred Maino is now overseer of spinning at Lonsdale Co. Berkeley Mill, Ashton, R. I.

James B. Moore, Jr., has been appointed as sales manager of the curtain division of North American Lace Co., Philadelphia. He was previously district manager in the metropolitan New York area for the Home Appliance Dept. of General Mills, Inc. He will make his headquarters in New York.

Stephen E. Fitzgibbon, studio director in New York of Twentieth Century Fox and Movietone News Studios, has resigned to join Unitas Hosiery Co., New York, in charge of motion picture tie-up between retailers and motion picture theaters.

John L. Hobson was the guest of honor at a dinner given on Sept. 4, by the management of W. J. Dickey & Sons, Inc., Oella, Md. Mr. Hobson retired as of Sept. 1, after more than 58 years of service with the firm. For the last 40 years he had been foreman of the warping department.

Halsey B. Leavitt, Jr. has resigned as superintendent of Fieldcrest Woolen Mill, a di-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NEWS ABOUT MEN

vision of Marshall Field & Co. at Spray, N. C. to accept the position of superintendent of Atlanta Wooler. Mill, Atlanta, Ga.

Thomas Heatherman, formerly overseer of dyeing with Faulkner & Colony, Keene, N. H., is now overseer of dyeing with American Woolen Co.

John Heaton, formerly overseer of finishing with Valentine Wooler. Mills, Bennington, Vt., is now overseer of finishing at American Woolen Co., Norwich, Conn.

Wm. Harmon, formerly overseer of finishing with American Woolen Co., is now in the same position with Neponset Woolen Co., Canton, Mass.

G. T. Jones, formerly in the Army Air Corps, is now foreman of carding at Cannon Mills, Eatonton, Ga.

E. G. Hester, formerly with Callaway Mills, LaGrange, Ga., has become superintendent of carding at Blackinton Mills, Conestee, S. C.

E. R. Beeman is manager; **J. B. Adams,** plans superintendent; **R. A. Wagner,** superintendent of weaving; **E. F. Maxwell,** overseer of preparation; and **D. F. Dyan,** engineer at Johnston Mill, Johnston, S. C.

Ulysses J. Lupien, industrial relations consultant for the Pacific Mills, Lawrence, Mass., has resigned.

Obituary

William N. Campbell, 53, formerly president of Goodall Worsted Co., Sanford, Me., died Sept. 8 at Kennebunkport, Me. He retired after Goodall merged with Sanford Mills in 1944 to form Goodall-Sanford, Inc.

Garland Edgar Mauney, 70, who for 30 yrs. was first vice president of Carolina Mills, Inc., died Sept. 29 at his home in Maiden, N. C. At the time of his death he was serving as second vice president of the mill. He was a former mayor of Maiden.

Albert E. Vogt, 69, president of Vogt Mfg. Co., Rochester, N. Y. died Aug. 29. Mr. Vogt was also an executive in the three subsidiaries—George R. Carter Co., Detroit; Lapeer Fabricators, Inc., Lapeer Mich.; and Frankoweave, Inc., Philadelphia.

James Gilet, 77, founder of Gilet Carbonizing Co., Lowell, Mass., died Sept. 8. Mr. Gilet was prominent in the wool-scouring business and a member of Boston Wool Trade Association.

Walker Lyerly, 68, president of Elliott Knitting Mills, Hickory, N. C., died in a Hickory hospital recently.

Joseph H. Bromley, 66, chairman of the board of Quaker Lace Co., Philadelphia, Pa., died recently in Germantown, Pa. The company was founded by Mr. Bromley's father.

S. Walter Batty, who became advertising manager of Draper Corp., Hopedale, Mass., last March on the retirement of William H. Chase, died Oct. 28. He had been with Draper since 1911 and was editor of "Cotton Chats" from 1922.

Francis S. Moore, 77, overseer of spinning for the last three years at Crescent Woolen Mills Co., Two Rivers, Wis., died Sept. 2. He was previously at the Rockford Mitten & Hosiery Co., Rockford, Ill., for 42 yrs. as foreman of spinning, winding, and twisting.

E. Rowell Holt, Sr., associated with the Charlotte, N. C., office of the U. S. Bobbin & Shuttle Co. for the last 13 years, died Sept. 12.

Herbert W. Lundy, 71, vice president and general manager of Penman's Ltd., Paris, Ont., died at Hamilton, Ont., recently. He first became connected with the knitting industry at Almonte, Ont., where he served as manager of Almonte Knitting Co., Anchor Knitting Co., and Penman's branch. In 1918, he took charge of the Kingston Hosiery Co., and in 1919 returned to Penman firm. He is a former president of the Canadian Woolen & Knit Goods Manufacturers Association.

John Robertson Love, 92, veteran of the textile industry, died recently in Colorado

VICTOR MILL STARCH

The Weaver's Friend

A KEESTAR PRODUCT

★ PENETRATES THOROUGHLY

★ DEPENDABLE

★ CARRIES WEIGHT INTO THE FABRIC

★ ALWAYS UNIFORM

★ BOILS THIN

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RARITAN, N. J.

MACHINERY
TENTERING
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Tentering-Chain Cleaning That Cuts Costs

CLEAN tentering chains and clamps the Oakite way, then figure the savings you've made in less cloth contamination, reduced lubrication costs, longer chain life.

For overhaul of chains, immerse sections in recommended Oakite solution, rinse, dry, then relubricate. For periodic maintenance, spray chains with hot Oakite solution, using air pressure through the Model 391 Oakite Air Gun.

The NEW Oakite textile industry Digest contains more details on this and 65 other maintenance-cleaning and related jobs. Write for your free copy NOW!

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Technical Representatives in Principal Cities of U. S. & Canada

MATERIALS
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SERVICE

OAKITE
REG. U. S. PAT. OFF.

Specialized Industrial Cleaning

AMERICAN...the yarn for you, runs more efficiently, produces a finer product, easier to sell...more profitably

American Yarn & Processing Co.

MOUNT HOLLY NORTH CAROLINA

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Mr. E. W. Wood
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GREENVILLE • SOUTH CAROLINA

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TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
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"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

NEWS ABOUT MEN

Springs, Colo. A native of New York state, he went to Indianapolis, Ind., where, with his brother, he founded the Brower & Love Brothers Co. mill, which later became the Indianapolis Bleaching Co., a subsidiary of Bemis Bros. Bag Co.

Herman Gardner, 78, president of Phoenix Hosiery Co., for the last 50 yr., died Sept. 13 at Milwaukee, Wis.

W. Ben Smith, 74, retired textile executive of Greenville, S. C., died Sept. 9. He went to Greenville in 1889 from Pelham Mills to become secretary of Brandon Mill which had just been organized. He later became vice-president of Brandon. In 1914, Mr. Smith resigned to become treasurer of Gordon Mercantile Co. and he retired in 1920.

Alexane W. Chambliss, 83, former chief justice of the Tennessee State Supreme Court of Appeals and chairman of the board of Richmond Hosiery Mills, Rossville, Ga., died in Jacksonville, Fla., Sept. 30.

Maurice G. Townend, 47, manager of the Charlotte plant of Parks-Cramer Co., and vice president and member of the board of directors, died Sept. 24 after a sudden illness. He was a graduate of MIT.

William H. Ruhl, 48, works manager of the Universal Winding Co., Providence, R. I., since 1935, died Sept. 11. He was employed by Nash Motors from 1921 until 1929, was production manager of the Chain Belt Co., until 1933, when he joined Universal Winding Co., becoming works manager in 1935.

Earl A. Powell, Jr., 29, New England sales agent for Universal Winding Co., Providence, R. I., died recently. Mr. Powell was a son of E. A. Powell, general manager of the Goodyear-Clearwater Mills.

E. Rowell Holt, 57, for 13 yr. associated with U. S. Bobbin & Shuttle Co., Charlotte, N. C., died Sept. 13.

Robert Leonard, 64, son of one of the founders of Holden Leonard Woolen Mills, Bennington, Vt., and formerly associated with that company, died recently.

Howard E. Davis, 58, manager of sales of heavy chemicals for E. I. du Pont de Nemours & Co., Grasselli Dept., died Sept. 13 at Wilmington, Del.

Henry P. Smith, 79, retired general manager of George H. McFadden & Bro., cotton merchants, died Sept. 30, at Philadelphia, Pa. Mr. Smith had been a member of the firm for 50 yr. He retired 2 yr. ago, but continued his association with the organization as an adviser.

Chauncey H. Ingalls, textile engineer and former partner in the Ingalls Engineering Co., died Sept. 22 at Laguna Beach, Cal. Mr. Ingalls retired from the engineering firm last April because of ill health. For 18 yr., he was mechanical superintendent of all of the plants of U. S. Finishing Co., and established his own engineering firm about 20 yr. ago.

J. Lewis Godfrey, 61, secretary-treasurer of Bloomsburg Hosiery Mills, Inc., Philadelphia, died recently.

Miss Grace H. Noles, former treasurer, office manager, and director of the George S. Colton Co., elastic webbing manufacturers, Easthampton, Mass., died recently.

Robert Stopgeshoff, an overseer at William Skinner & Sons, Holyoke, Mass., died recently, after service of 45 yr.

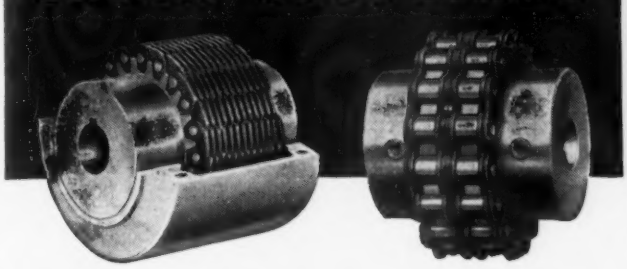
John T. Cumminskey, 86, who retired a number of years ago after serving as overseer of spinning at the Orcuttville Mill, Stafford Springs, Conn., died Oct. 1.

George Tyson, 86, former foreman at Lonsdale Co., Lonsdale, R. I., died Oct. 4 at Lonsdale, R. I. Mr. Tyson had been a foreman in the machine shop for 40 yr. previous to his retirement 16 yr. ago.

Herman W. Irrgang, 61, superintendent of dyeing, Waverly Dyeing & Processing Co., Philadelphia, Pa., died recently at Milmont Park, Pa.

George L. Reid, 76, a retired overseer of weaving, died recently in Plymouth, Mass. Before his retirement in 1945, he was overseer of weaving at Uxbridge Worsted Co. mill in Pascoag, R. I.

MORSE ROLLER and SILENT CHAIN COUPLINGS



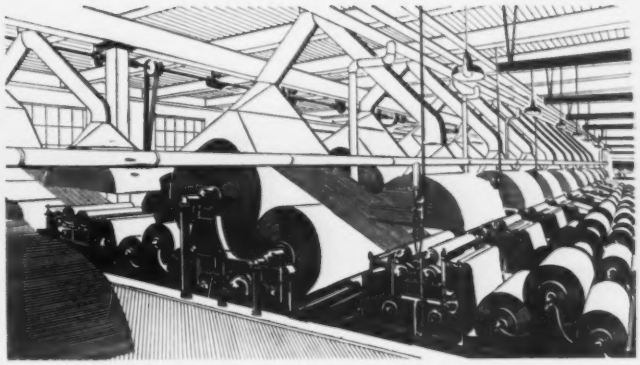
Flexibility in a rugged ALL-STEEL design!

Morse Flexible Roller and Silent Chain Couplings permit slight shaft misalignment. All-steel, machined all over—rugged, durable, easily aligned and readily disassembled, they transmit power smoothly with minimum attention. Send for further information.

MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N. Y.

A Borg-Warner Industry

MORSE MECHANICAL POWER TRANSMISSION PRODUCTS



"Wolmanized" treated lumber is a material that fills scores of needs in the textile industry, from floors to roof decks.

This Lumber is *Service-Proved*

"Wolmanized*" lumber is used in more textile mills than any other brand of treated lumber. It is the *service-proved* brand of treated wood that has over 20 years of rot resistance behind it. American Lumber & Treating Co., 1672 McCormick Bldg., Chicago 4, Ill.

*Registered Trademark

Wolmanized TREATED LUMBER

WOLMANIZED A L T AMERICAN LUMBER & TREATING CO.

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It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

Director of Circulation,
TEXTILE WORLD,
330 West 42nd St., New York 18, N. Y.

Please change the address of my Textile World subscription.

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WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell Service, which includes Stainless Steel-lined tanks and tubs — round, rectangular and special shapes.

Catalog on request.

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS TOWERS

ALL STEEL ECONOMY BALING PRESSES

ALL SIZES FOR ALL PURPOSES

LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.

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New York Office: 43 Water St.
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Terrell Machine Co., 1200 No. Church St., Charlotte, N. C.
Boston Office: 170 Summer St.
Other Sales and Service Branches in most Important Cities.

One of a series *of messages to help you increase your understanding of business paper advertising, and its effect on your business.*

Why you and your advertising manager are partners

FROM WHERE YOU SIT, advertising may look like the "glamour department" of your company—necessary, of course, but pretty far removed from the hard-headed realities of the production line.

But take a closer look. In one respect, the advertising manager's job bears a striking resemblance to your own.

You're production-minded. You're concerned with anything that will improve plant procedures, speed up assembly time, prevent waste, and reduce the manufacturing cost per unit.

And that is precisely where you walk arm-in-arm with your advertising manager. Because he thinks the same way about the *manufacture of a sale.*

The whole process of selling and distribution are his assembly line. And every time he can reduce the unit cost of a sale by so much as a few cents, he increases your company's chance to show a profit.

Ask him for a definition of advertising, and he will probably tell you that it is simply *mechanized selling*, a machine that multiplies the productive capacity of the sales force — seeking out prospects, arousing their interest, creating a preference for the things your company makes.

And when it is concentrated among the hand-picked readers of business papers, advertising becomes the most efficient machine this partner of yours has found for lowering the cost of producing a sale.

What are the ten ways to measure the results of your business paper advertising? You'll find the answers in a recent ABP folder, which we'll be glad to send you on request. Also, if you'd like reprints of this advertisement (or the entire series) to show to others in your organization, you may have them for the asking.

TEXTILE WORLD

is one of the 129 members of The Associated Business Papers, whose chief purpose is to maintain the highest standards of editorial helpfulness—for the benefit of reader and advertiser alike.

SEARCHLIGHT SECTION

WANTED

TEXTILE FOREMAN

Must have experience both in coning of rayon yarn from cakes, as well as soaking of rayon cakes for throwing. Position is temporary but interesting for experienced man who wants to spend few months in South America at good salary.

P-2594, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED

OVERSEER OF FINISHING

40 Loom New England Mill Making High-Grade Woolens. Modern equipment. We will pay top salary to right man. Please give full details when replying. All replies will be kept in strict confidence.

P-2328, Textile World
330 West 42nd Street, New York 18, N. Y.

Cost Accountant

For worsted and woolen yarn mill.

Must be familiar with mill operations and be capable of preparing weekly cost reports, budgets, etc. for top management. Excellent opportunity for qualified applicant. Mill located in New England. Write complete resume of experience and salary requirements. Replies held in strict confidence.

P-2658, Textile World
330 West 42nd Street, New York 18, N. Y.

POSITIONS VACANT

FIXER ON full-fashioned hosiery machine wanted. State experience and salary. Steady position in air-conditioned modern plant. National Hosiery Mills, Inc., Indianapolis, Indiana. J. A. Goodman, President. All correspondence strictly confidential.

WANTED EXPERIENCED finisher on Acetate and Vicose Fabrics. Must be thoroughly familiar with all types of Jig Fabrics as well as Plied Yarn Crepes. French Crepe, etc. For southern plant. Apply in own handwriting, giving full details of education and experience. P-2565, Textile World, 330 W. 42nd St., New York 18, N. Y.

FOREMAN WANTED for Redraw Department on Rayon Crepe. Must be capable of handling help and layout for approx. 50 operators. Give full details of training, experience and former employers. P-2643, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

PRACTICAL NARROW Fabric man, experienced weaver, loom fixer, designer and superintendent seeks responsible position with Trimming, Woven Label or Elastic Webbing Mf. concern. P-2617, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE EXECUTIVE. Young man 36 years of age, complete textile background in worsted industry, from fleece to finished fabric is looking for an opportunity to become associated with a progressive concern. Phil. Textile School graduate, married, one child, presently employed in an executive capacity, desires to make a change where an expanding opportunity is open for an aggressive young man. PW-1908, Textile World, 330 W. 42nd St., New York 18, N. Y.

NAPPING ROOM overseer. 15 years experience in napping and shearing of duvetyns and headlinings. Thorough knowledge of production, efficiency and maintenance. Age 38. PW-2755, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE EXECUTIVE, 49 years of age with 27 years' experience producing carded and combed cotton yarns, worsted rayon blends and 100% worsted on the cotton system. At present employed. Would like to contact party interested in securing the services of a man qualified to manage yarn mill efficiently on a salary bonus basis. PW-2759, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING OPPORTUNITY OFFERED

WANTED, TO contact manufacturers that need representation in the Southeast. Am particularly interested in mechanical lines that that are used by textile plants or find a ready adaptation to textile manufacturing. Have a wide acquaintance in the textile field and a textile-manufacturing background. Textile-engineering graduate. RA-2578, Textile World, 330 W. 42nd St., New York 18, N. Y.

SPECIAL SERVICE

TROUBLED WITH making samples or short orders? Let expert technician design and weave fabrics on his looms. SS-2764, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANT TO contact responsible firms which can offer a man with an engineering education and broad experience in textile development, manufacturing and engineering a permanent connection with full executive duties and responsibilities and freedom of initiative. P-2179, Textile World, 330 W. 42nd St., New York 18, N. Y.

ATTENTION

TEXTILE MILLS,

Dyers & Printers of Cloth

As exclusive factory Agents we have built up names and established business for manufacturers in different lands, and we offer the same services to you.

Negotiations are invited for your sole representation, where you have Exclusive Export Agents in the USA. We seek exclusive sub-agencies for these markets.

Principal bankers: Hong Kong & Shanghai Banking Corporation, Singapore.

Further bank and factory references furnished upon request.

THE UNITED AGENCIES
124 OWEN ROAD SINGAPORE
Cable address—"Agents", Singapore

FOR SALE

TEXTILE WATERPROOFING PLANT

Attn. Mfrs. Coated Cloth, Rubber and Paper

Equipment consists of Spread Coating, Sizing and Impregnating equipment with long drying space, two Coating Towers capable handling twelve bolts cloth at once; One Color Printing Machine with engraved rollers; Talc Dusting Machine; Cloth Winding Machines; Mixing equipment and tools. Complete laboratory containing Milling, Mixing, Testing and Weighing equipment. New York City. 14,000 Sq. Ft. desirable space. High Pressure Steam, 165 lbs. pressure available 24 hrs. per day. R. R. siding. Fireproof sprinklered building; explosion proof electrical equipment; low insurance rate. Attractively furnished offices. Present equipment can be economically converted from textile coating to other uses. **Will sell this plant as a whole or in substantial parts. This plant may be of interest to some foreign group for removal and operation abroad.**

BO-2712, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED TO BUY

Rayon Weaving Plant

100-200 Looms
With or without real estate
Send us full details
BO-2788, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED TO BUY COTTON YARN PLANT

MAKE OFFERS TO:
Box TW-342, 113 W. 42 St., N. Y. 18

MEN WANTED
POSITIONS OPEN

We can place SUPERINTENDENTS, assistant superintendents, designers, assistant designers and stylers woolen and worsted mills; superintendent worsted scouring, carding and combing; manager screen printing plant; assistant superintendent woven label plant; worsted yarn superintendent.

OVERSEERS for the following departments; cotton slashing $85.; open drawing; woolen carding $80-90 week; weaving rayon and cotton fabrics; knitting on Tompkins, Cooper, Brinton, Supreme and Philadelphia jacquard machines; cotton and woolen skein dyeing; worsted spinning; rayon and acetate piece dyeing; woolen specking, mending and burling; cotton finishing (So. Amer.); silk throwing; woolen spinning, napping and teasel gigging; woolen winding and twisting; sitching (sweaters); woolen and worsted weaving, cotton carding, combing, spinning combined; cotton carding, spun rayon mixtures, etc.; woolen frame spinning; warp preparation, rayon (So. America); head colorist screen printing plant, West Coast.

SECOND HANDS for the following departments: cotton ring spinning, cotton package and skin dyeing; dry finishing worsteds and woolens; cotton bleaching piece goods; cotton piece goods, woolen raw stock and piece goods dyeing; worsted dressing.

MECHANICAL engineers, designers and draftsmen for textile machinery; jacquard card cutter fine index work; silk, rayon, cotton, woolen and worsted and narrow fabric loom fixers; tricot knitting machine fixer; cost men; master mechanics, plant and maintenance engineers; chemists, colorists and laboratory men; woolen dresser tenders; garnet men; cotton card grinder; textile machinery designer-draftsman $5,000-6,000 year; section hands worsted drawing, spinning and twisting; sewing machine fixers; finished goods perchers; rayon slasher tender.

We invite correspondence (confidential) with mill executives seeking new positions and employers seeking new executives.

Over 50 yrs. Con. Empl. Service for Textile Mills.

CHARLES P. RAYMOND SERVICE
(Incorporated)
294 Washington St., Boston 8, Mass.

WANTED

Narrow Fabric

ELASTIC-MILL

Must have sufficient steam facilities for dyeing and finishing.

Will consider outright purchase or participation with present management. Latter preferred since technical knowledge is wanted.

B. O. 1723 Textile World
330 W. 42nd St., New York 18, N. Y.

Wanted
TEXTILE PLANT

CASH PAID

BY FOR CAPITAL STOCK or ASSETS

large financially powerful diversified organization wishing to add another enterprise to present holdings.

Existing Personnel Normally Retained

Box 1222 1474 B'way, N. Y. 18, N. Y.

AT AUCTION

Worsted Machinery and Manufacturing Equipment

At Plants of

PRUDENTIAL WORSTED MILLS

SATURDAY, NOVEMBER 22, 1947
WAYNE AVE. & BERKLEY STS.
PHILADELPHIA, AT 10 A. M.
and continuing at Clear Spring Plant
MAIN STREET, DOYLESTOWN, PA., AT 2 P. M.

PHILADELPHIA PLANT—24 C & K 72" Automatic 20 Harness M. D. Looms; Saco Lowell and Furbush M. D. 3½ and 2½" Ring Twisters; 7 Altemus 78 and 79" M.D. Warping Mills; Johnson & Bassett 144 and 120 End Winders; Hunter 10, 8 and 6 string M. D. Washers; Voelker 66" M. D. Cloth Press; P & W 66" M. D. Double Shear; Voelker Vacuum Extractor with new M. D. Sturdevant Pump; Hunter M. D. Fulling Mills; Hygrolite Conditioning Machine; Tolhurst 42" Extractor, Parkes & Woolson Sander and Brush, etc.

DOYLESTOWN PLANT—Davis & Furber (R & LH) 120 and 144 Spindle Winders; 6 Universal 120 Spindle #90 M. D. Winders; 2 Universal 6 Spindle #50 M. D. Tube Winders; Johnson & Bassett 50 Spindle Winders; Hunter Fulling Mill; P & W Double Shear; P & W Tube Rolling and Measuring Machines; Kenyon Dryer; Gessner 72" M. D. Extractor; Tolhurst 48" Extractor; Birch Bros. 3-Bowl Crab, etc.

SPECIAL NOTE: The Prudential Worsted Mills has purchased the Clear Spring Plant and is moving to Doylestown and cannot use the equipment advertised here. Both plants are operating and will continue to operate.

Inspection Saturday, November 1, 8 and 15, 1947, 9. A. M. to 3 P. M. ONLY.

Descriptive Catalogs Upon Application to

SAMUEL T. FREEMAN & CO., *Auctioneers*
1808-10 Chestnut St., Philadelphia 3
27 William St., New York 5 — 80 Federal St., Boston 10

DYE SPRINGS

MANUFACTURED IN ALL THE METALS.

EXPERTLY RE-WOUND AT A REAL SAVING

SOLD IN USED GOOD CONDITION

WALTER S. GATES
LAKE ORION, MICH.

WE BUY — WE SELL — WE TRADE

CHEMICALS
PHARMACEUTICALS
SOLVENTS • PIGMENTS
WAXES • BY-PRODUCTS
WASTES • RESIDUES
DYES

Other materials and supplies

CHEMICAL SERVICE CORPORATION
80A Beaver Street, New York City 5, N. Y.
HAnover 2-6970

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-947, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Anywhere

GOING PLANT

Large or Small
by INDIVIDUAL

• Rayon Broadcloth • Tricot
• Hosiery • Cash Available

Reply to
MAURICE MITCHEL
Drake Hotel, Hollywood, Calif.

INDUSTRIAL TEXTILE APPRAISERS

Appraisals made of industrial machinery and equipment by qualified textile engineers for insurance, accounting, financial and taxation purposes.

Your correspondence invited.

ROYAL LOOM EXCHANGE
(Est. 1922)
Passaic, New Jersey

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. — Boston, Mass.

WANTED

DYE KETTLES

Stainless Steel Piece Dye Kettles 8, 10, 12 ft. widths, in good condition.

W-2628, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED

NARROW FABRIC LOOMS

Complete with jacquards or dobbies. Will purchase complete plant suitable for weaving labels up to four inches wide. Write giving full information and details—

W. 2090, Textile World, 330 W. 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

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Registered Patent Attorneys
Patent and Trade-Mark Practice before U. S. Patent Office.
Validity and Infringement Investigations and Opinions.
Booklet and form "Evidence of Conception" forwarded upon request.
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WANTED

UNIVERSAL WINDERS

Model 6C

W-2092, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

1—three-roll calender for cotton cloth, of 42 to 45" width.
1—Skein Dyeing machine for 800 to 1000 lbs.
1—Skein drying machine for 800 to 1000 lbs.

W-2655, Textile World
330 West 42nd Street, New York 18, N. Y.

HAROLD K. MARTIN
Patent and Trade-Mark Attorney
Patents — Trade-Marks
Patentability, Infringement and Validity Searches and Opinions.
891 National Press Bldg., Washington, D. C.

ADDITIONAL EQUIPMENT WANTED ADVERTISING ON PAGE 312

Here is a page of genuine PROFIT OPPORTUNITIES

- Whether you are looking for a complete mill or a single machine.
- We also offer experienced service in problems of liquidation or transfer of ownership—

1—72" C&M 2-cylinder Brushing machine
3—Button Breakers 2-18", 1-50"
1—45" Textile Finishing Machine Co. 6-bowl Calenders
1—54' x 60" D&F 2-cylinder iron Shoddy Cards with feeders
1—Lot Numerous Card Parts
1—41½" Knit goods calender stainless steel rolls with motor Reeves drive
1—65" C&M Dewing Machine, motor driven
1—64" P&W Doubling & Rolling-up Machine with clock
1—Set 8 Textile Vertical 48" x 23" Copper Dry Cans
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—32" Tolhurst Copper Basket Extractor
3—60" Tolhurst Copper Basket Extractors
1—45" Dobson & Barlow Cotton Feeder
3—40", 42" E&H Flat Folders with take-up stands
1—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
1—Rodney Hunt M3, 2 string fulling mill, belt driven
15—40", 80" card and Napper Grinders
1—60" Dye Jigger with stainless steel rolls and self adjusting spreaders
200—40" Draper Model K, 20 Har Dobby Looms
110—45½" reed space Model E Draper Automatic Looms with lacey tops 3 bank stop motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
12—54½" C&K Box 20 & 25 Harness Dobby Looms
32—54" R.S. C&K 4 x 1 Auto. Looms, 20 harness double index dobby head
2—74" Heavy Duck Looms, roller top
14—82" C&K 2 x 1 automatic Looms, 8 harness cam motions, motor driven
10—92" C & K, 4 x 1 Automatic Looms, 8 Harness, Cam Motion, Motor Driven
16—92" & 100 C & K 2x2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
8—100" & 110" C&K 4 x 4 Box Looms, 25 harness, belt driven
1—58" Blake Inspecting, Winding & Measuring Machine
1—64" P&W Measure & Winder

COMPLETE MILL UNIT

Profit Opportunities

* A Six Set Woolen Yarn Mill
* Fourteen set Woolen Yarn Mill
* A Woolen Piece Goods Finishing Plant
* 3400 Spindle Bradford System Worsted Spinning Mill
* Six Loom Weaving Plant for Plastics or Wool — 110" C&K 4 x 4 25 harness Looms, with accessory equipment
* 5208 Spindle Cotton Mill, equipped with 24 Cards and Foster #101 Winder. Priced for quick sale.
* 15,000 Spindle Cotton Mill with reconditioned machinery, including 61 Cards, Auxiliary Equipment and Winders
* 30 Loom Label Weaving Mill
* Complete Engraving Equipment for Textile Printing Cylinders with 15 Pantograph Machines

MANY OTHER UNITS WITH PROFITABLE PRODUCTION POSSIBILITIES. PLEASE OUTLINE YOUR REQUIREMENTS.

SEND FOR COMPLETE DETAILED LIST OF MACHINERY FOR SALE

3—66" P&W 60 & 100 yd. Measuring Machines, belt driven
3—60" Measuregraph Machines
1—70" King Gerber Tubing Machine with Veeder-Root counter
1—12 Pole Smith Drum Skein Mercerizer
2—240 Spindle J&B 1⅞" gauge Mules
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle J&B 2" gauge Mules
110—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors. Also various size Rebuilt Motors.
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper
3—80" D&F 20 roll Single and double Acting Nappers
1—30 x 30" Mezzera Wool Opener
1—50" Padder two rubber rolls with barrel expander, motor driven
1—76" Birch Measuring Perch, ceiling type
1—19" Tatham Rag Picker
9—40" Kitson Breaker Pickers, Finisher Pickers, and Single Process Pickers, motorized
2—48" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
1—60" R.B.F. 3 color Printer M. Dr.
6—52", 65½, 66, Voelker and Gessner Single and Double Bed Rotary Cloth Presses
1—44" Quetch one rubber and one brass roll, stainless steel box, expansion pulley, motor driven
3—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92", 96", and 100" D&F Pin Type Reels, with creel, hack stand, neck reed, warp reel beamer and warp compressor
1—60", C&M Single Blade Plush Shear
2—60" P&W Single Blade Woolen Shears
1—66" Parks & Wilson single Blade Shear
11—65½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
1—80½" P&W Single Blade Shears
1—32" Grand Rapids 2-knife Knit Goods Slitting Machine
1—42" Grand Rapids 20-knife Slitting Machine
1—42" C&M Singer with hood
3—Lowell 2' cylinder Slashers
1—32½" D&F Jack Spool Winder
6—Smith and Furbush Spoolers, 44" drums, 48 ends, 41½" long spools with 10" head, with spool stands
1—60" C&M Single Brush Type Tiger
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
1—210 spindle Draper Twister, 2" ring
1—208 spindle F & J tape driven wet Twister 2¼" ring, 3½" ga., motor driven with approx. 3000 bobbins
2—8-string Hemmer Wool Washers
2—#90 Univ. Winders
1—80 Spindle Foster Tube Winder
9—100 Sp. Foster Model 12 12A-21A Tube & Cone Winders

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EXCELLENT FINISHING EQUIPMENT

1—W&J tenter frame, 40'x50" width.
1—set 17 dry cans, 62" width.
1—set 21 dry cans, 84" width.
2—VV Button Breakers, 50" width.
12—Hope Pantograph engraving machines, 50" width, reconditioned.
1—VV 50" Semi-Decator, complete pump, motor, and blanket.
1—4 roll Calender 90" width.
5—sets squeeze rolls, 18" width, reconditioned rubber rolls.
1—National Loop dryer, 27' long, 10' high, 86" wide.
1—set rubber squeeze rolls, 74" width.
1—set iron squeeze rolls, 72" width.
1—Woonsocket Napper, 84" width, D.A. 36 rolls.
2—Roy Napper grinders.
1—Woonsocket shearing machine 66" width.
4—Dye Jiggs 50" to 54" width.
2—Quetsches 50" width.
1—42"x84" Norwood Cascade Washers.
2—Centrifugal Extractors 48", top motor.

COMPLETE MILLS

COTTON

1—6,696 spindle, spinning and weaving.
1—5,000 spindle spinning.
1—3,985 spindle spinning.
1—27,000 spindle spinning and weaving.

WORSTED AND WOOLEN

1—1,000 spindle worsted spinning.
1—600 spindle woolen mill.

CARDING SPINNING & WEAVING

30—H&B cotton cards 40", 10" coilers.
2—sets D&F 3 cylinder 48"x48" woolen.

SPINNING

10—Whitin 2½" ring, 4" gauge, 224 spindles.
40—F&J 2¼" ring, 3" gauge, 204 spindles.
19—84 spindle Duplex Doublers.
10—70 spindle Fletcher twisters.
4—Atwood 5B Doublers, 100 spindles.
6—Woonsocket Speeders, 7x3½" 130 Sp.
3—Woonsocket Slubbers, 12x6" 68 Sp.
14—Woonsocket Intermed. 8x4", 152 Sp.

WEAVING

4—Draper Model X, 60" width.
20—C&K 4x1, 20 harness, Ind. Mtr. 52½" reed space.
2—C&K 4x1, 25 harness, 52½" R.S.
122—Stafford 1x1, 20 harness 51½" between swords.
4—C&K 4x1 Auto, 92", Mtr. Drive.
100—Draper Model K, 40".
15—Narow Fabric Looms.

MISCELLANEOUS

56—Whitin Combers, 10" coilers.
6—Whitin Sliver Lappers 9¾".

MOTOR GENERATOR SET

1—Crocker-Wheeler motor 50 HP. 60 cycle, 1740 RPM, 220 volt, Generator EH type, 1740 RPM, 250 DC 38 KW.

1—Van Vlaanderen 7 can slasher 54" long, 24" diameter, low and high speed arrangements, 2 motors.

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Republic Textile

EQUIPMENT COMPANY

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Purchase and Sale of Used Machinery

REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

FOR SALE

1—P. & S. 60" Picker Feed
1—Clark 36", 6 bar Mixing Picker
1—Schofield 18"x30" Waste Picker
1—Spencer Oiler, swing type
1—Wool Carbonizing Unit
1—Sargeant Stock Dryer
1—Foster Model #101 Mtr. dr. 80 sp. Coner
1—Foster Model #30 60 sp. Coner, Mtr. Dr.
1—L & G 16 sp. Cop Winder from skeins
2—O. L. #20 Hi-Speed Cop Winders
2—Altemus 6" Drum Spoolers
Universal #50 and #90 Winders rebuilt
1—Logemann Screw Baling Press down stroke, 250# bales
1—Minnich Double Chamber, Mtr. Dr. up stroke Baling Press
1—Sipp Motor Driven 72" Warper
2—Altemus Pinless Warpers, rebuilt to order
1—D & F Warper Rebuilt to order
2—Altemus Long Chain Beamers 96" - 110" wide
15—C & K 82" - 92", 4x4 box looms
2—C & K 120" Looms
1—L. & G. Chenille Cutter, rebuilt
6—Halton 2600 Hook Jacquards
10—Halton 1304 Hook Jacquards
2—Royle 600 hook Card Cutters
1—S. F. Yarn Sizer & Dry Cans
1—Smith-Drum 54" Skein Mercerizer
1—Hunter 8 string Cloth Washer
1—Fletcher 60" underneath mtr. dr. Extractor
1—P & W 66" Roll, Measuring & Doubler
1—Windle 72" Doubling & Measuring Machine
1—E & H 58" yard flat Folder
1—C & M 60" Power Perch
1—P & W 66" Double Cloth Shear
2—P & W 66" Plush Shears
1—Hermas 58", 4 cyl. Silk Shear
1—Gessner 66" Heavy Duty Press
1—Voelker 65½" Double Bed Press
1—Woonsocket 80", 20 roll, d. a. Napper
1—P. & W. 66", 3 cyl. Brush

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20—3½", 128 N., S&W, B'5s with rubber lay-in att., stripers, (Lot #16857)

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1—P. & S. Dryers—10 Fans & Motors—Revolving Sticks.
2—48" Motor Driven Extractors with balancers.
60—C & K 82" Automatic.
1—Johnson 5 Drum Slasher.
1—New 60" Tuber & Measuring Machine.

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TEXTILE
DIVISION

PRODUCTS COMPANY, INC.

33-41 Bergen St.,

PATERSON 2, N. J.

October, 1947

GENTLEMEN:

We are pleased to bring to your attention the following Plants and Equipment which are available for immediate delivery.

Complete Worsted Yarn Dyeing Plant.

Complete Silk Throwing Plant.

Complete Mill for Dye. & Fin. Jersey Knit Goods.

Woolen Spinning & Weaving Unit (contains iron cards and W-3 looms.)

Also, a number of Complete Plants for every phase of the Textile Industry.

14—New Whitin 40" Cards, 12" coilers.
3—D & F 3-cyl. 60" x 48" Iron Cards.
1—D & F 3-cyl. All Iron 48" x 48" Card.
2—Proctor & Schwartz Sample Cards.
1—D & F 60" x 60" Metal Breaker Cyl.
2—Worsted Cards, 60" x 60", Iron Cyl.
3—D & F Mules, 288 & 375 spindles.
10—Whitin Twisters, 208 sp, 3¼" gau, 2½" ring.
6—Haskell-Dawes Horizontal Twisters.
4—D & F Woolen Frames, 192 sp, 4½" gau.
5—Saco-Lowell Worsted Spinners, 288 sp.
6—C & K 72" Worsted Looms, 4 x 4.
20—Saco-Lowell & H & B Drawing Frames, 4 x 6 deliveries, 12" coilers.
2—Collins Trap Worsted Twisters.
2—Prince-Smith Twisters, 180 spindles.
1—Hunter Heavy Duty Wool Opener.
1—Barber-Colman Warp Tying Machine.
60—Draper D 76" looms, gem heads.
5—Draper x 40" Looms, with motors.
50—Draper x 60" Looms, with motors.
15—C & K 72", 76" Jacquard Looms.
36—C & K 72" Silk Looms.
4—C & K 92" 4 x 1 auto. woolen looms.
3—Tape Condensors, 60" & 48".
17—Stafford Worsted Looms, 72", 82".
1—Morrison 60" 3-roll Calender.
1—Hunter Lapper.
NEW Tubers, Beamers, Batchers.

1—2-Roll Hydraulic Calender.
1—Butterworth 60" Clip Tenter Frame.
4—Whitin High Speed Tricot Machines.
1—Sargent 3-Bowl Scourer.
2—Hussong Skein Dyeing Machines.
1—Tolhurst 60" Under-slung Extractor.
2—V. V. 65" S. S. Dye Jiggs.
1—Franklin Dyeing Machine.
2—Obermaier 500# Package Dyers.
4—Carbonizer Dryer Feeders, 60".
1—Complete Pantagraph Engraving Unit.
5—Copper Cans, 30" x 30", (narrow fabric work.)
NEW Stainless Steel Dye Becks.
NEW Stainless Steel Dry Cans.
1—P & S 90" Airlay Dryer.
1—Birch Bros. Cloth Dryer.
1—Proctor & Schwartz Wool Dryer.
1—R. B. & F. 5-color 42" Print Machine.
1—4-color 60" Print Machine.
1—P & S Raw Stock Dryer, 6' Apron & Feed.
4—Copper Steam Jacketed Kettles.
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8—Trop 48" Extractors, Open Top, direct motor drive.
4—Kidder Presses, 48" - 66" cyls.
3—Screen Print Tables.
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P.S. Send us your listings of idle machinery. We buy and sell from a single item to a complete plant.

AVAILABLE IMMEDIATELY FOR SALE

USED EQUIPMENT

ITEM 12152

Stock Dye Kettle

Stainless Steel Lined, Tank 36" diameter by 54" deep.

ITEM 12176

2 Creepers

Bottom Creeper 101" x 72". Top Creeper 84" by 72" for taking up slack on traveling cloth.

ITEM 12207

Drum with Stainless Steel Coil

for Dye Machine

ITEM 12218

Emerson Water Bath

Tank 17-¼" by 28" by 18" high. Copper Outside.

ITEM 12264

Butterworth Pin Tenter Dryer

30' long—open type—maximum width 72". 2 Steam Boxes and 2 Heating Coils with traps.

ITEMS 12294 AND 12295

8 by 4 Saco Lowell Roving Frame

Cotton, 160 Spindle without drafting unit.

ITEM 12418

Coating Machine

72" wire cloth roll chain drive.

ITEM R-B

Centrifuge or Vacuum Extractor

All Stainless Steel 60" Basket

Made by American Tool & Machine Co.—Includes special Louis Allis 15 HP motor on main drive and auxiliary 1½ HP motor for treatment at low speed of 30 RPM with cycle control for reversing at low speed.

ITEM N-H

2 Derby Doublers or Sliver Lap Machines

Making a 20" Lap

ITEM H-R

1—36 Spindle Foster Winder

Model 101—Equipped with 18 Spindles for 70" Paper Tubes and 18 Spindles for Wood Tubes or Wood Cones—70" Traverse Foster Butterfly Type Stub Catchers.

ITEM R-99

Worsted Card—Davis & Furber

60" Card—Equipped with Calender Rolls & Can Coiler—Single Cylinder.

ITEM R-41

1—Worsted Card

Six Lickerin Type—60"x60" Single Cylinder.

ITEM B-H

Raw Stock Dryer—Sargent

Apron 48" wide x 37 ft. Long—Estimated Capacity about 600± per hour—overall approx. 10 ft. wide x 45 ft. long.

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AGER, Stainless Steel Acid
AGER, Tower, New
BEAMER, 60" Van Vlaanderen
BEAMER, 60" with steaming drum
BLOWER, New, Squirrel cage type
BLOWERS, R. C. 8 x 5 3/5" 350 cu. ft. per min.
BOIL OFF TANK, 47"x72"
BUTTON BREAKER, V.V. spiral, 60"
BUTTON BREAKER, V.V. 50"
BELT, leather 3 ply 28" x ½" x 70" long
CALENDER, Kasterinsky 36" for knit goods
CALANDER, 3 roll VV. 60" face
CLIPS, V.V. & W & J
DOUBLER, Windle, 60"
DRY CANS, set of 8, 72"x23" dia. horizontal
DRY CANS, 7 Morrison 48" high pressure
DRYING DRUM, 61" face x 24" dia.
DRYER, P&S Airlay
DRYER, P&S Loop, Revolving Sticks
DYE BECKS, Stainless steel 4' to 20' New
DYE TUBS, 6' Wood complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Rochester Rotary 30" x 20", 3 pocket 20 lb. capacity
EXTRACTOR, 26" Amer. Motor
EXTRACTORS, Beam 50" & 60" BB
EXTRACTOR, K & G 48", rubber lined basket
FANS, EXHAUST 3 blade propeller 30", 36", 48"
FLAT FOLDERS, Elliott & Hall adjustable
FULLING MACHINES, L.F. Hemmer double line
HOISTS, Budgit 1 ton ½ ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60", 50" stainless steel
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PAD, 3 roll Hydraulic
PAD, 2 roll 50'
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PRINT MACHINE, 10" sample or ribbon
PRINT MACHINES, 6, 7, & 8 Color 60", RB&F, & Waldron
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PUMP, NASH HYTOR #H5 with motor
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RIBBON FINISHING MACHINE
SCUTCHER, NEW
SHEAR, Hermas, 4 knife 70" wide
TENTER FRAME, Pin W&J 30'x220" wide
TUBERS—Paterson variable speed motors
TUBER, V.V. with doubling attachment
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WASHER, Steel, G.L. Type
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1—Set of 9 stainless steel cans, 128", roller bearings, Johnson joints, horizontal.

1—Stack 7, 9, 10—130" wide, steel tinned.

1—Set 43 cans, 90" wide, of which there are:
8—Horizontal stainless steel cans, Johnson joints, roller bearings.

1—Set 30 Steel Tinned Cans 120" wide Removeable Journals, Bucket Type Vertical-Swing Folder.

27—Cans steel tinned, removable journals, syphoned, vertical.

8—Vertical steel tinned, removable journals and buckets, with 90" swing folder.

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6—C&K Silk & Rayon 4x4 Looms 54" Reed Space 20 Hook—Light Gem Head Motor Driven.

14—Draper 80" reed space Automatic loom 28 Battery Cam modern Modified D Individual motor driven ¾ HP motors Mechanical warp stop motions completely equipped.

9—Attwood 5B Twisters 2½ in. rings 100 spindle. Individual motor driven.

36—C&K 72" Automatic Bobbin changer, 2x1 silk & rayon looms, intermediate heads, 20 hook, motor driven, roller bearing, built 1925, 11,000 serial numbers.

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FOR SALE

5—Barber-Colman High Speed Warpers and Creels, 432 ends per creel. Will produce 350 yards per minute.

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1—Saco-Pette Drawing Frame, 6 deliveries leather top rolls, 12" coilers.

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4—1000 Pound Raw Stock Dye Machines, complete with electric hoist, Sargent Feeder and all pumps.

24—Whitin Spinning Frames, 2¾" Gauge, Band Drive, Belt Driven, 168 spindles per frame.

2—12 x 6 Whitin Slubbers, 60 spindles each, 1928 model.

1—H & B Slasher, 7 & 5 foot cylinders complete with double roll size box.

1—Smith Drum, 3 pocket dryer, 42" x 120". Serial No. 24-358-263, 10.5 H.P., 220 volt, with starter, switches and fittings.

1—Kier 3½ Ton, complete with motor pump, heater and pipes.

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2000 Cans—Excellent condition.

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1 BATCHER, 50" 2 roll
2 BRUSHES 36" and 54" with blowers
1 CALENDER ROLLING HEAD, 48"
CALENDERS — 3 roll 43½", 2 roll 58", 5 roll 60", 6 roll 80", 3 roll 100"
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CALENDERS, EMBOSSING, 2 roll 38", 2 roll 54"
2 COTTAGE STEAMERS, 12' and 16'
3 DOUBLERS, 54", 60" and 80"
2 FULL DECATURS, 72" and 84"
DRY CANS, COPPER — 19 cans 54"x23", 23 cans 86"x23", 22 cans 120"x23"
DRYERS — LOOP 84"face, mtr. dr., *NET* 75" and 90", SKEIN — Truck Type, RAW STOCK 350 to 400 lb. units
DYEING — PACKAGE 50 to 500 lb. units; DYE KETTLES 44", 58" and 72", RAW STOCK 600 lb. units, SKEIN, 100 to 250 lb. units
3 EXTRACTORS, 32 to 60, copper baskets, belt dr.
2 EXTRACTORS 50" and 60" copper baskets, underneath motor drive.
2 EXTRACTORS, VACUUM 78", pumps and motors.
4 FOLDERS, 40" to 100", 1 and 1¼ yards
2 FULLING MILLS, double compartment
1 GRINDER, NAPPER 120"
8 JIGS, 42"to 60" mtr. dr.
2 MANGLES, 40" and 60"
4 NAPPERS, 72" to 100", 12 to 36 rolls
1 PADDER 60", 2 roll, mtr. dr.
1 PALMER TENTER QUETCH, 83"
1 PALMER, 64"x60", blanket and motor
3 PRESSES, Rotary, 66" to 80"
4 Thread POLISHING UNITS, 60 sp. ea.
3 PRINTING MACHINES, 8 color 44", 4 color 62", 5 color 76" with Ager
2 SEWING MCHS, MERROW 60ABB
3 SEWING MCHS, RAILWAY, 43" to 72"
5 SHEARS 45" to 104", single and double

D & F ALL IRON 3 CYLINDER CARDS

Erected, Reconditioned 1946.

Automatic Hopper Feeders
1st Cylinder #26 wire
6 workers, 6 Strippers, Lickerin, Angle Stripper, Fancy, Doffer, Apperly Intermediate Feed.
2nd Cylinder #28 wire
6 workers, 6 Strippers, Lickerin, Angle Stripper, Fancy, Doffer.
3rd Cylinder #34 wire
5 workers, 5 Strippers, Lickerin, Angle Stripper, Ring Doffers, 48 ends.
Cards fully clothed.

A Small Complete Jute Unit, consisting of:

Breaker and Finisher Cards, First and Second Drawing, Roving Frames, Softener, etc.

WORSTED SPINNING UNITS

One (1) consisting of 2 sets of Drawing, 1680 cap spindles, Twisting, etc.
One (1) consisting of 1 set of Drawing, 920 cap spindles, Twisting, etc.

1 SHEAR, 4 blade, 72", sewing head, mtr.
1 SLASHER COTTON, 7' and 5' cyl. 57"
1 TEASEL NAPPER, 108"
1 TENTER FRAME, 40' x 55"', s.s. clips
1 TENTER FRAME, 90' x 56", with housing
1 TENTER FRAME, PIN, 50' x 72"
1 RAW STOCK ACIDIZER AND SCOURING UNIT
1 RAW STOCK 2 bowl SCOURING UNIT with DRYER

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2 BREASTS, 48" and 60" metallic wire
1 set 4 cyl. CARDS, 48" x 48", Rubb Condensers
3 sets 3 cyl. 60"x48" and 60"x54", Tape Condensers
4 — 2 cyl. ASBESTOS CARDS 48", camel back lappers
1 JUTE PICKER CARD 48"
2 JUTE FINISHER CARDS, 5' x 6'
20 PLATT COTTON CARDS, 40"
1 CLEANER, BUCKLEY BLADE BEATER
1 CONDENSER, TAPE, 60" Card
50 D2 COMBERS, 10" coilers
2 WORSTED COMBS, 68" rack
3 CONDENSERS, RUBB 48" and 60"
4 JUTE DRAWING FRAMES
3 WOOL CONE DUSTERS
11 BRAMWELL 48" and 60" CARD FEEDS
2 JACKSPOOLERS, 40", 60 ends

LOOMS

3 Draper D 40", 8 har., 60 Draper E 28, 2 har., 250 Draper E 40" 4 har., 325 Model K, 40" and 42", 36 Draper D 78", 16 har., 36 C. & K. 55" 4x1 auto. 25 harn., 12 C. & K. 82" 4x1 auto., 20 har. 57 C. & K. 85" 4x1 auto., 8 har., 11 C. & K. 72" 4x4, 20 har., 32 C. & K. 92" 4x4, 25 har.
10 MULES, 192 to 480 sp., 1¾" to 2½" ga.
5 PICKERS, Burr, Mixing and Rag type
4 REELERS, 72", 100 sp. ea.
5 SPINNING FRAMES, 240 sp. ea., 3½" ga.
6 SPINNING FRAMES, Worsted, 2" ring, 400 sp., units.
2 TWISTERS, Novelty, 192 sp. ea., 3" ga.
6 WINDERS, #30, 80 sp. ea.
4 WINDERS, #25, 60 sp. ea.

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13—Saco-Lowell F-5 Hopper Feeders for 40" Pickers.
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1—Whitin Single Process Picker, 2 beaters, with automatic feeders, 1927 Model.
14—Kitson 40" Beater Sections with 16" blade beaters.

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45—Lowell 40" F. T. Cards, 28" doffers, 12" coilers.
9—Saco-Pettee 45" F. T. Cotton Cards, 12" coilers, 27" doffers.
18—Saco & Pettee 45" F. T. Cotton Cards, 12" coilers, 27" doffers.
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24—Whitin Model D-2 Combers, 12" coilers.
10—Whitin Ribbon Lap Machines.
10—Whitin Sliver Lap Machines.

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83—Deliveries Saco-Lowell Drawing, metallic rolls, 1-⅜" front, spiral gears, belt driven, 1915 Model.
15—Deliveries Whitin Model H Drawing, 12" coilers.
90—Deliveries Saco-Lowell, Saco-Pettee and Saco & Pettee Drawing, 12" coilers, spiral gears, belt driven.

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4—Whitin 12x6 Slubbers, 76 and 80 spindles.
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8—H & B 12x6 Slubbers, 64 and 72 spindles.
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2—Woonsocket 9x4½ Slubbers, 144 spindles.
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SPINNING

5—Whitin Model B Tape Drive Spinning Frames, 3" gauge, 2-1/16" rings, 336 spindles each, long draft.
12—Whitin Tape Drive Spinning Frames, 3" gauge, 1-⅞" and 1-5/16" rings, 256 spindles.
48—Saco-Lowell Band Drive Spinning Frames, 3-¾" gauge, 2-½" rings, 192 spindles, equipped with Roth long draft.

TWISTING

10—Saco-Lowell Tape Drive Twisters, 7" gauge, 5-½" ring, 132 spindles, 1944 Model, motor driven.
30—Saco-Lowell Tape Drive Twisters, 7" gauge, 5-½" ring, 100 spindles, 1914-1916 Model, motor driven.
5—Whitin Band Drive Twisters, 6" gauge, 4-½" ring, 80 spindles.
8—Saco-Lowell Tape Drive Twisters, 5-½" gauge, 4-½" ring, 120 spindles, 1920 Model, motor driven.
2—Draper Tape Drive Twisters, 5-½" gauge, 4-½" ring, 120 spindles.
3—H & B Band Drive Twisters, 5-½" gauge, 4-½" ring, 120 spindles.
• 18—Whitin Model BB Twisters, 5" gauge, 3-¾" ring, 176 spindles, 1934-37 Model.
• 4—Whitin Model C Twisters, 5" gauge, 3-¾" ring, 176 spindles, 1934-37 Model.
11—Collins Tape Drive Twisters, 4-½" gauge, 3-½" ring, 152 spindles, 1920 Model, motor driven.
18—Whitin Band Drive Twisters, 4" gauge, 2-¾" ring, 120 spindles.
• 18—Whitin Model B Tape Drive Twisters, 3-¼" gauge, 2-½" ring, 224 spindles.
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2—77" Worcester Warp Compressors, with dressing attachments, 1 with 3—528 spindle, other with 2—792 spindle double side steel creels.
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• 2—Saco-Lowell Slashers, 5' and 7' cylinders, with controls.

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70—Draper Model "E" Looms, 45" reed space, roller tops, arranged for motor drive.
40—Draper Modified "D" Looms, 59" reed space, arranged for motor drive.
12—Draper Modified "D" 64" Looms, 69" reed space, Stafford thread cutters, midget feelers, motor driven.
71—Draper Modified "D" Looms, 69½" reed space, electric stop motions, Stafford thread cutters, arranged for motor drive.
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120—Draper Model "H" Looms, 77" reed space, Stafford Thread Cutters, 8-harness side cams, motor driven.
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2—56" Morrison enclosed gear copper lined Dye Jiggs
2—54" General enclosed gear S. S. lined Dye Jiggs
1—set of 9—20" x 60" Heavy Steel Dry Cans
1—50" V. V. Button Breaker
1—36" motor driven self balancing Hercules Extractor
2—60' motor driven beamers
3—60" motor driven Tubing & Measuring Machines
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1 #90 Universal Winder with overhead Gate Tensions and Bunch Builders

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One stainless steel 50-100 pound package dyeing machine.
Must be in good condition.
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28 Drawing Frames — 6 deliveries each
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15 Embossing machines—60"
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10 Parks & Woolson brushing machines — 60"
5 Special fabric finishing units
5 Pin Tenter Dryers up to 72"
8 Pile shearing machines 60" to 82"
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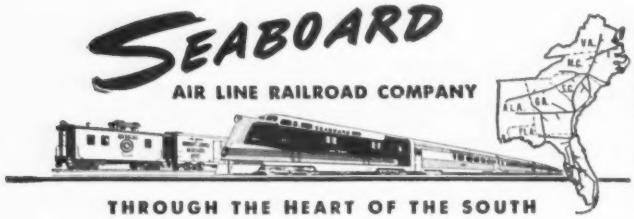

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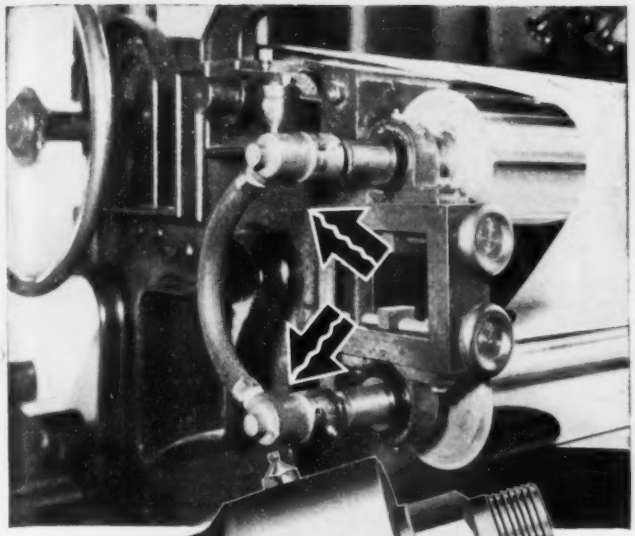

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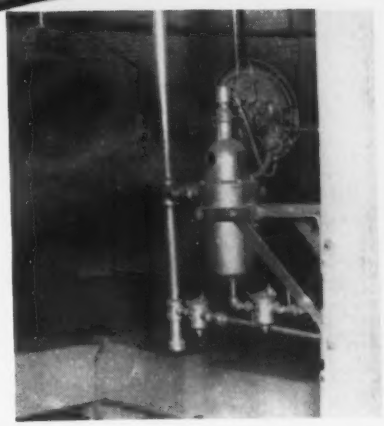

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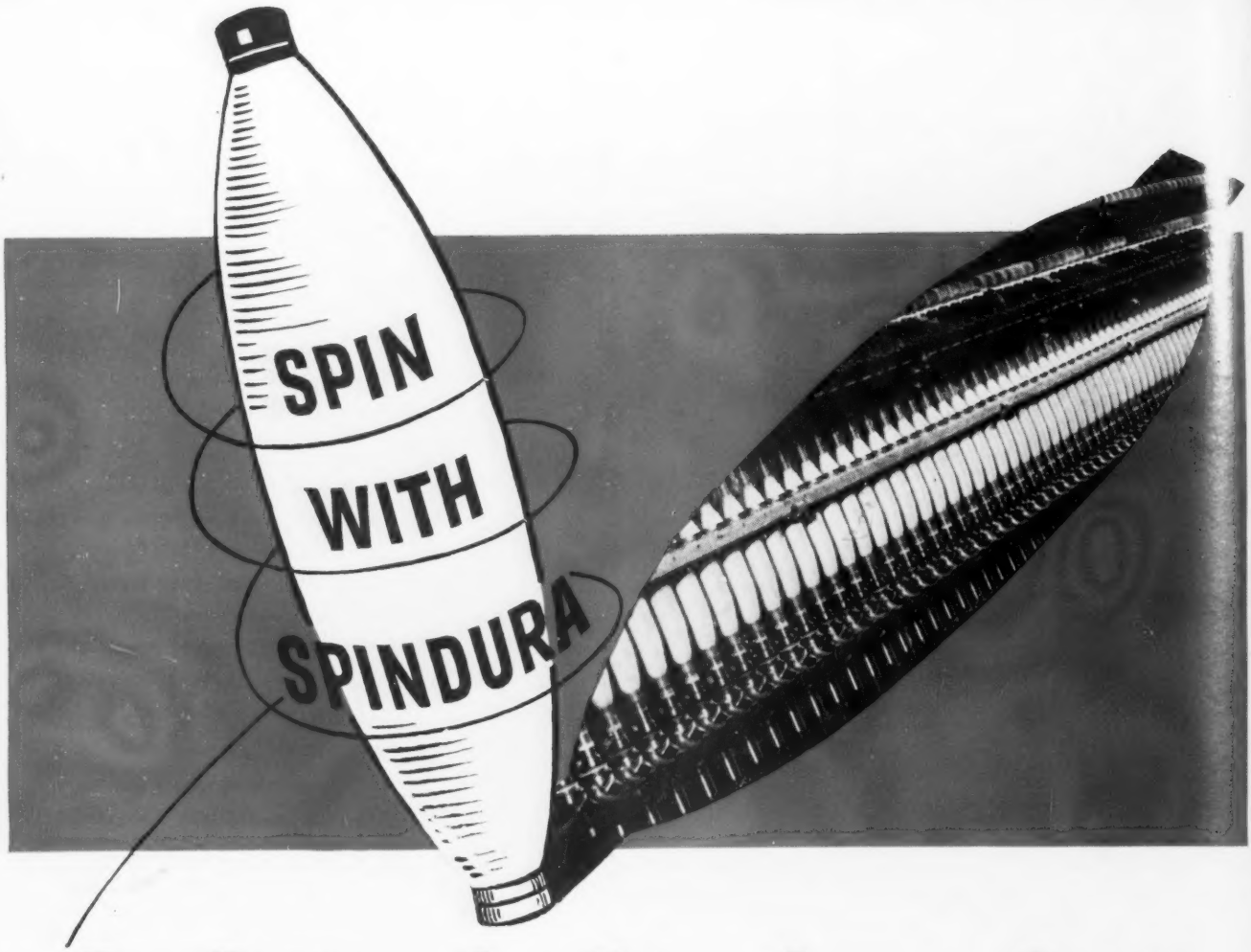

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